)CUMENTATION PAGE

Form Approved
OMB No 0704-0188

2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
June 1986	Final

4. TITLE AND SUBTITLE
Test Excavations at 3CT219 and 3CT220: Archaeological Assessment of Two Sites Along the Big Creek Channel Enlargement Item 2, Crittenden County, Arkansas

5. FUNDING NUMBERS
DACW66-85-M-1340

6. AUTHOR(S)
Timothy C. Klinger
Steven M. Imhoff

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Historic Preservation Associates
Post Office Box 1064
301 West Mountain Street
Fayetteville, Arkansas 72702

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Dept. of the Army
Memphis District Corps of Engineers
B-202 Clifford Davis Federal Bldg.
Memphis, TN 38103

10. SPONSORING / MONITORING AGENCY REPORT NUMBER
186

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Unlimited

DISTRIBUTION STATEMENT A
Approved for public release
Distribution Unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

Archaeological excavations were conducted. Controlled surface collections were taken and three 1m X 1m test units were excavated at each site. One site was found to be eligible for nomination to the National Register, however further excavation was not recommended. Avoidance of the portion of the site (3CT220) located outside the right-of-way was recommended.

14. SUBJECT TERMS

15. NUMBER OF PAGES
66

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT

TEST EXCAVATIONS at 3CT219 and 3CT220

TIMOTHY C. KLINGER

STEVEN M. IMHOFF

HPA

HISTORIC PRESERVATION ASSOCIATES REPORTS 86-6

JUNE 1986

TEST EXCAVATIONS at 3CT219 and 3CT220

JUNE 1986

KLINGER and IMHOFF

TEST EXCAVATIONS AT 3CT219 AND 3CT220

Archeological Assessment of Two Sites
Along the Big Creek Channel Enlargement, Item 2
Crittenden County, Arkansas

by

Timothy C. Klinger
and
Steven M. Imhoff

Historic Preservation Associates
Post Office Box 1064
301 West Mountain Street
Fayetteville, Arkansas 72702

Historic Preservation Associates Reports 86-6

June 1986

Report submitted to the Department of the Army, Memphis District Corps of Engineers in accordance with Purchase Order No. DACW66-85-M-1340

ABSTRACT

Archeological investigations along the Big Creek Channel Excavation, Item 2 were conducted at 3CT219 and 3CT220 in late August and early September 1985 for the Memphis District of the U. S. Army Corps of Engineers. The work was accomplished by Historic Preservation Associates under the terms of Purchase Order No. DACW66-85-M-1340. Controlled surface collections were taken and three 1 m x 1 m test units were excavated at each site. As a result of this work, 3CT219, a Woodland and Historic period site, was determined to be shallow and heavily disturbed and, therefore, ineligible for inclusion on the National Register of Historic Places. Previous assessments of the site by Iroquois Research Institute were confirmed and no further cultural resources work was recommended. 3CT220 was found to be much larger than previously indicated by Iroquois Research Institute investigators and to exhibit evidence of Tchula, Baytown and Historic period occupations. The deposits reached a maximum depth of 70 cm and evidence of undisturbed cultural deposits was recovered. Although the site was found to be eligible for nomination to the National Register, further work was not recommended because the portion of the site in which undisturbed cultural deposits were found was situated outside the construction right-of-way. Deposits within the right-of-way were found to be restricted to the plowzone and heavily disturbed. Avoidance of the portion of the site located outside the right-of-way was recommended.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

Background

In order to fulfill its obligations under the National Historic Preservation Act of 1966 (PL89-665), the National Environmental Policy Act of 1969 (PL91-190) Executive Order 11593 of 13 May 1971, the Archeological and Historic Preservation Act of 1974 (PL93-291) and the Procedures for the Protection of Historic and Cultural Properties (36CFR800), the Memphis District of the U.S. Army Corps of Engineers (COE) issued a contract to Iroquois Research Institute (IRI)(DACW66-78-C-0054) for an intensive cultural resources survey of the Big Creek, Item 2 project area in Crittenden County, Arkansas. As part of the survey, at least one 1 m x 1 m test unit was excavated at each site located within the project right-of-way to aid in determining its eligibility for the National Register of Historic Places.

Following a review of the IRI report (LeeDecker 1979b) by the Arkansas State Archeologist (Appendix A), proposals were solicited for the additional testing at sites 3CT219 and 3CT220. The Historic Preservation Associates (HPA) proposal was submitted on 10 May 1985 and Purchase Order No. DACW66-85-M-1340 was awarded on 10 June 1985. In general, the Scope of Work (Appendix A) called for systematic surface collection at both sites (or screened shovel tests in the event of poor surface visibility), the excavation of three 1 m x 1 m test units and the establishment of a permanent datum.

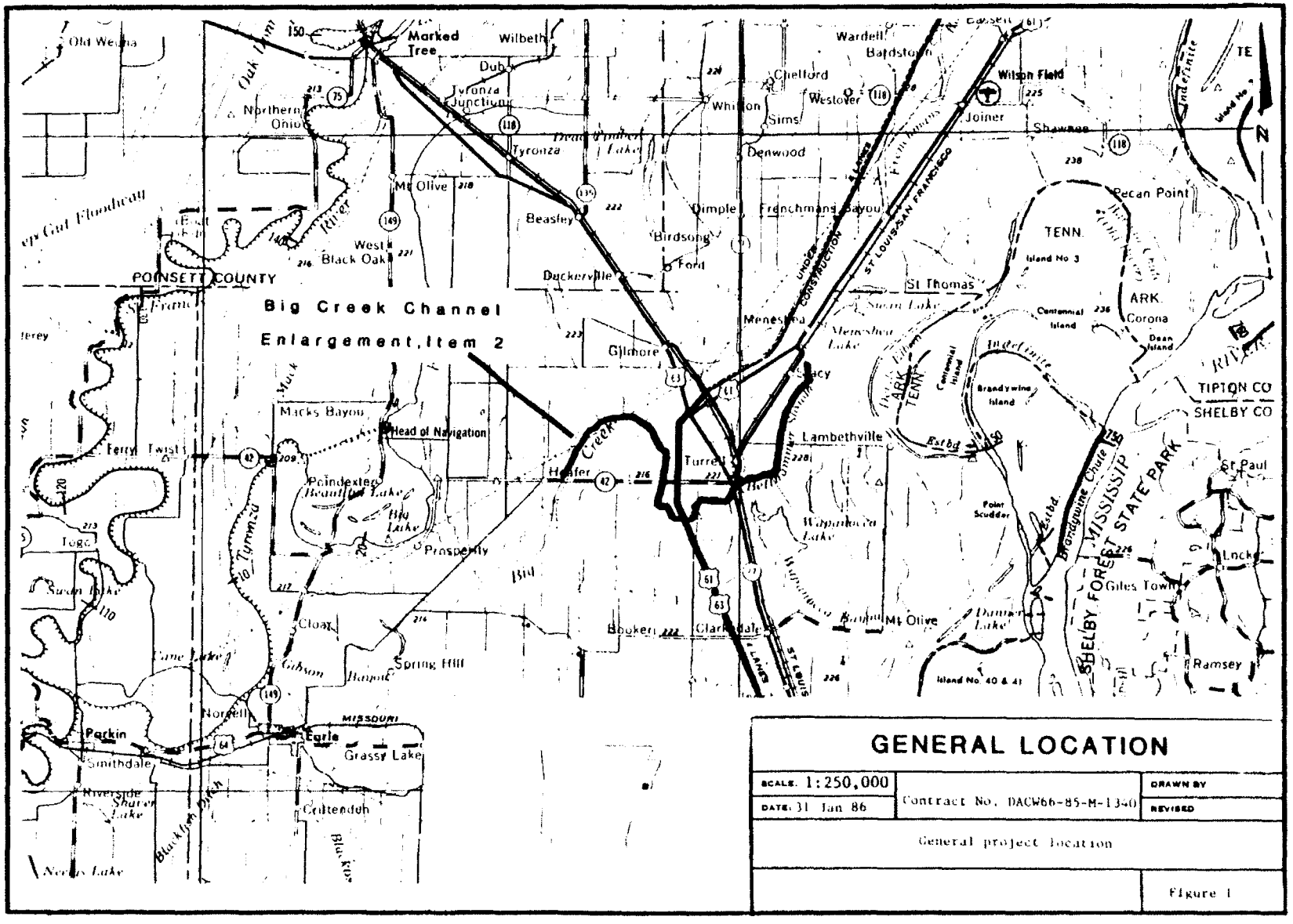
Purpose of the Report

The purpose of this report is to document archeological investigations conducted at 3CT219 and 3CT220 which were intended to assess the nature, extent and significance of these sites relative to National Register of Historic Places (NRHP) criteria. This report follows the guidelines and standards of fieldwork and reports contained in the Arkansas State Plan (Davis 1982a:B15-B22), McGimsey and Davis (1977:64-77) and Section 5 of the Scope-of-Work. All cultural materials recovered and copies of related documents will be curated by the University of Arkansas Museum in Fayetteville, Arkansas.

Project Location, Sponsor and Participants

The Big Creek project is located in north central Crittenden County, approximately 15 miles (24.1 km) northwest of Memphis, Tennessee (Figure 1). Item 2 begins near the town of Heafer and meanders northeast for a distance of 12.7 miles (20.4 km), terminating a short distance east of Stacy, Arkansas. 3CT219 is located at project station 953+25, while 3CT220 is at station 977+50. Both sites are located on the left descending bank of Big Creek (Figure 2).

The sponsoring agency for this work is the Memphis District of the U.S. Army Corps of Engineers. The Contracting Officer is Mr. Clinton E. Hopkins and his authorized representative (COR) is Mr. Jimmy D. McNiel. Historic Preservation Associates carried out the investigations. Mr.

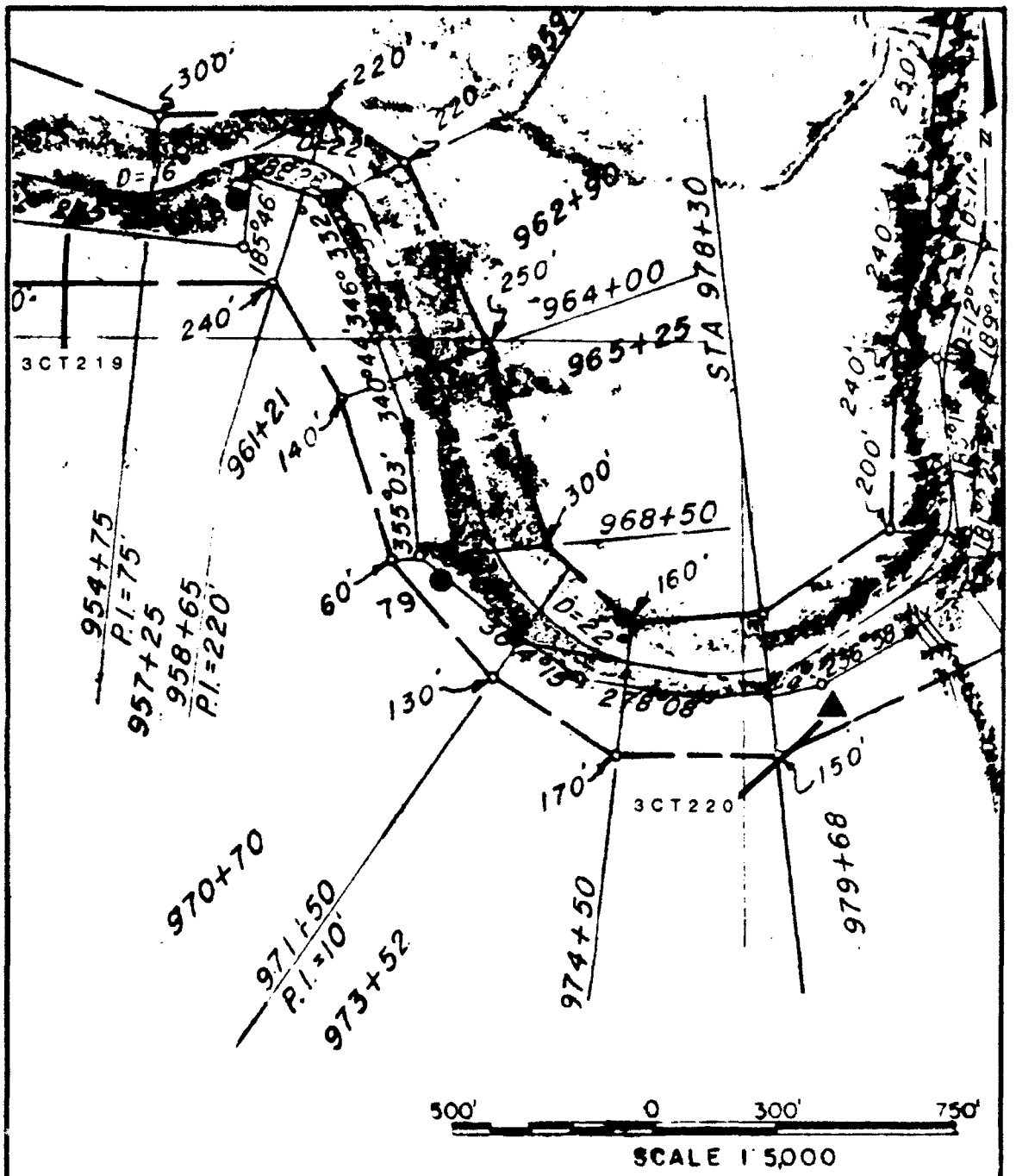


GENERAL LOCATION

SCALE: 1:250,000	Contract No. DACW66-85-M-1340	DRAWN BY
DATE: 31 Jan 86		REVISED

General project location

Figure 1



PROJECT LIMITS		
SCALE: As Shown	Contract No. DACW66-85-M-1340	DRAWN BY
DATE: 31 Jan 86		REVISED
3CT219 and 3CT220 in relation to the project		
		Figure 2

Timothy C. Klinger served as the Principal Investigator while Ms. Kathleen Hinkle directed the fieldwork and was assisted by Mr. Richard P. Kandare and Mr. Robert F. Cande. Klinger and Steven M. Imhoff prepared the report and were assisted by Mr. Walter Unglaub, who prepared many of the figures. The artifacts were processed by Ms. Hinkle and by Mr. Travis Rhoades and were analyzed by Mr. Imhoff (Appendix B).

Project Description, Impacts and Dates of Investigation

The Big Creek Channel Enlargement, Item 2 entails improvements to existing ditches, including portions of Big Creek, Ditch No. 1, Bellhammer Slough and Chute 38. The improvements will include cutting off some meanders along Big Creek and excavating the channel to obtain a bottom width of 40 ft (12.2 m) at the upstream end and 55 ft (16.8 m) at the downstream end. Material excavated from the bottom and edges will be used to construct a berm parallel to the ditch. The present right-of-way is 370 ft to 390 ft (112.8 m to 118.9 m) wide but ranges from a minimum of 300 ft (91.4 m) to a maximum of 600 ft (182.9 m).

Direct impacts to the cultural resources anticipated as a result of the project include damage from heavy equipment movement, removal of vegetation along the ditch, channel excavation and burial beneath fill removed during construction. Indirect impact may result from plowing down the berm, thereby burying portions of the sites beneath culturally sterile soil and altering visible site limits.

The exact extent of direct impact prior to the HPA investigations was uncertain since the nearness of the sites to the ditch was a critical factor. Although the IRI report indicated that both sites were situated immediately adjacent to the ditch and entirely within the Direct Impact Zone (DIZ), their systematic collection grid did not extend beyond the project boundary, leaving open the possibility that additional cultural materials might exist outside the project. This was particularly true in the case of 3CT220 because of the presence of the natural rise immediately south of the right-of-way. It would be unusual indeed for a prehistoric site in the Mississippi Valley to be located on the lowest available elevation (Imhoff 1982:50-132; Klinger 1978). Therefore, it seemed entirely possible to us that cultural materials would also be found outside the DIZ and that those within the right-of-way had been redeposited from the higher elevations by plowing and downslope movement of artifacts.

Fieldwork was conducted on 5 through 14 August and 2 through 6 September 1985. The sites were field checked and preparations made for excavation on 5 and 6 August. Mapping, surface collecting and testing took place at 3CT220 on 7 through 14 August and 3 and 4 September. Work at 3CT219 took place on 5 and 6 September.

PROJECT GOALS AND SCOPE OF WORK

Project Goals

The purpose of the fieldwork was to determine whether significant data regarding the prehistory and history of the Central Mississippi

Valley are present at 3CT219 and 3CT220 and whether the sites might, therefore, be eligible for nomination to the National Register of Historic Places. The HPA assessment was guided by four basic questions:

1. What is the condition of the sites?
2. What is the horizontal and vertical extent?
3. During what periods were the sites occupied?
4. What function did the sites serve; in what activities did the occupants engage?

The primary goal of the project was to assemble the data gathered by HPA and previous investigators into a set of coherent facts that could be used to answer these questions and, thereby, arrive at an informed assessment of site significance relative to National Register criteria. Once these general questions were answered, more specific research goals, such as those contained in the State Plan (Morse, et al 1982) could be considered.

Scope of Work

The complete Scope of Work is presented in Appendix A. Portions of it dealing specifically with the work required are presented below.

4. General Performance Specifications.

4.02. Surface Data Retrieval.

Surface collection of the site area shall be accomplished in order to obtain data representative of total site surface content. Both historic and prehistoric items shall be collected. The Contractor shall carefully note and record descriptions of surface conditions of the site including ground cover and the suitability of soil surfaces for detecting cultural items (ex: recent rainfall, standing water or mud). If ground surfaces are not highly conducive to surface collection, screened shovel test units shall be used to augment surface collection procedures.

Care should be taken to avoid bias in collecting certain classes of data or artifact types to the exclusion of others (ex: debitage or faunal remains) so as to insure that collections accurately reflect both the full range and the relative proportions of data classes present (ex: the proportion of debitage to implements or types of implements to each other). Such a collecting strategy shall require the total collection of quadrat or other sample units in sufficient quantities to reasonably assure that sample data are representative of such discrete site subareas as may exist. Since the number and placement of such sample unit will depend, in part, on the subjective evaluation of intrasite variability, and the amount of ground cover, the Contractor shall describe, in the report, the rationale for the number and distribution of collection units. In the event that the Contractor utilizes systematic sampling procedures in obtaining representative surface samples, care should be taken to avoid periodicity in recovered data. No individual sample unit type used in surface data collection shall exceed 36 square meters in area.

The Contractor shall undertake (in addition and subsequent to sample surface collecting) a general site collection in order to increase the sample size of certain classes of data which the Principal Investigator may deem prerequisite to an adequate site-specific and intersite evaluation of data.

4.03. Subsurface Data Recrieval - Testing.

a. Subsurface (1m x 1m) test units (other than shovel cut units) shall be excavated in levels no greater than 10 centimeters. Where cultural zonation or plow disturbance is present, however, excavated materials shall be removed by zones (and 10 cm levels within zones where possible). Subsurface test units shall extend to a depth of at least 20 centimeters

below artifact bearing soils. A portion of each test unit, measured from one corner (of a minimum 30 X 30 centimeters), shall be excavated to a depth of 40 centimeters below artifact bearing soils. All excavated material (including plow zone material) shall be screened using a minimum of 1/4" hardware cloth. Representative profile drawings shall be made of each excavated unit.

b. The Contractor shall establish a permanent datum at each site which shall be precisely related to the site boundaries as well as to a permanent reference point (in terms of azimuth and distance). If possible, the permanent reference point used shall appear on Government blueline (project) drawings and/or 7.5 minute U.S.G.S. quad maps. If no permanent landmark is available, a permanent datum shall be established in a secure location for use as a reference point. The permanent datum shall be precisely plotted and shown on U.S.G.S. quad maps and project drawings. All descriptions of site location shall refer to the location of the primary site datum.

c. Stringent horizontal spatial control of site specific investigations will be maintained by relating the location of all collection and test units to the primary site datum.

d. Other types of subsurface units may, at the Contractor's option, be utilized in addition to those units required by this Scope of Work.

e. Subsurface investigations will be limited to testing and shall not proceed to the level of mitigation. However, in order to provide enough information to make a determination of site eligibility to the National Register of Historic Places, a minimum of three (3) test units will be placed into each site.

f. All test units excavated shall be backfilled by the Contractor.

4.04. Anaysis [sic] and Curation. Unless otherwise indicated, artifactural [sic] and non-artifactural [sic] analysis shall be of an adequate level and nature to fulfill the requirements of this Scope of Work. All recovered cultural items shall be cataloged in a manner consistent with state requirements or standards of curation in the state in which the study occurs. The Contractor shall consult with appropriate state officials as soon as possible following the conclusion of fieldwork in order to obtain information (ex: accession numbers) prerequisite to such cataloging procedures. The Contractor shall have access to a depository for notes, photographs and artifacts (preferably in the state in which the study occurs) where they can be permanently available for study by qualified scholars. If such materials are not in Federal ownership, applicable state laws, if any, should be followed concerning the disposition of the materials after the completion of the final report. Efforts to insure the permanent curation of properly cataloged cultural resources materials in an appropriate institution shall be considered an integral part of the requirements of this Scope of Work.

ENVIRONMENTAL SETTING

Physical Environment

Detailed discussions of the natural and cultural environment of northeast Arkansas are presented in numerous publications (Morse 1980; Harris 1980; King 1980; Million 1980; Morse and Morse 1983; Fehon 1975; House 1975; Cochran 1978; Klinger 1978; Jurney 1978; Klinger, et al 1983:13-35) and will not be reviewed here. Our discussion will focus on the local environment immediately surrounding the two sites in question.

Although the general environment has probably been fairly constant since the time 3CT219 and 3CT220 were occupied, Morse and Morse (1983:9) note that "climatic variations . . . sufficient to influence cultural behavior are an expectation, but virtually no relevant data have been collected." Subsistence remains recovered from other sites occupied at about the same time (for a summary of subsistence data from other Mississippi Valley sites see Klinger, et al 1983:379-382) suggest that

the general environment has changed little, if any, during the intervening years.

Crittenden County is located in the eastern lowlands of the Mississippi River alluvial plain (Figure 3). Surface geology is dominated by recent Mississippi River meander belts (Figure 4) that supported a forest of bottomland hardwoods (Shelford 1963:89-114; Putnam 1951; Putnam and Bull 1932) until large scale drainage and land clearing converted the area almost completely into croplands. The downstream portion of the project is situated on meander belt 3, which was active between 6,000 and 4,600 to 4,700 years ago (Saucier 1974:17, 21). The upstream portion of the project is situated on the present meander belt (number 5), which became active about 2,800 years ago (ca 850 B.C.) (Saucier 1974:22).

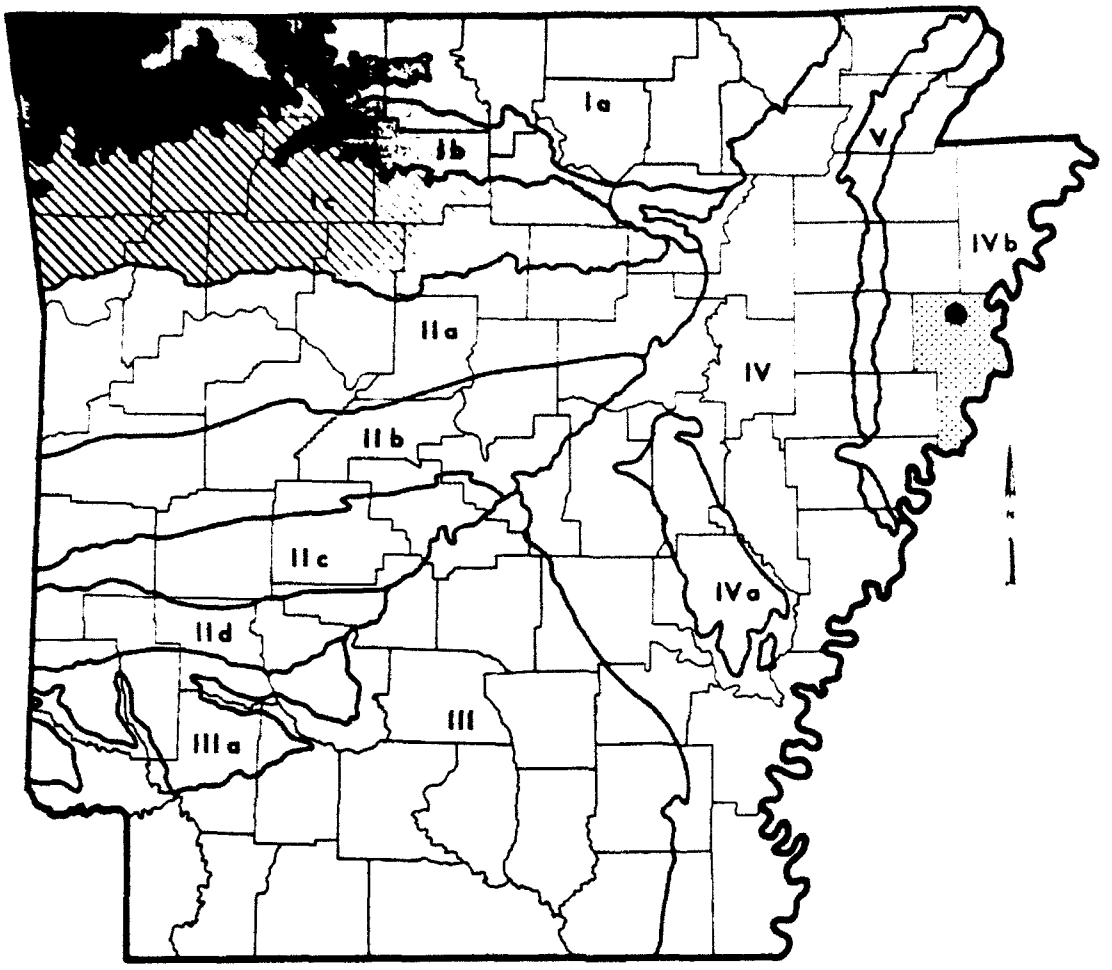
Immediately east of 3CT220 is an abandoned channel of meander belt 5, in which Wapanocca Lake is situated. Big Creek generally flows along an abandoned course of the Ohio River (Saucier 1964)(Figure 5), except where 3CT219 and 3CT220 are located. At that point Big Creek meanders along the base of an old natural levee, cutting across a point bar deposit associated with the abandoned course.

Soils associated with the point bar deposit (Figure 6) include clays and silty clays of the Tunica and Sharkey series. The abandoned Ohio River course is filled with silty clays of the Alligator and Sharkey series. All of these soils were formed in a slack-water environment and formerly supported cypress tupelo swamp (USDA 1973:2; Putnam and Bull 1932; Putnam 1951; Cochran 1979:18-25). The Alligator series comprises 11.9% of the soils in Crittenden County and, prior to flood control measures, was occasionally or frequently flooded. The seasonal high water table is normally within 6 inches (15.2 cm) of the surface (Gray and Ferguson 1974:30). The series is described as (Gray and Ferguson 1974:8):

> . . . poorly drained, level and gently undulating soils in old slack-water areas on bottom land along the Mississippi River. These soils formed in thick beds of clayey sediments.
>
> In a representative profile, the surface layer is dark grayish-brown silty clay about 4 inches [10.2 cm] thick. The upper 7 inches [17.8 cm] of the subsoil is grayish-brown clay, the middle part is gray clay that extends to a depth of about 49 inches [124.5 cm], and the lower part is gray silty clay that extends to a depth of about 69 inches [175.3 cm]. The subsoil is mottled throughout with shades of yellowish brown. . . .
>
> Alligator soils are moderate to high in natural fertility. Content of organic matter is medium to low. Permeability is very slow. . . . These soils shrink and crack as they dry and expand when wet. . . .

Two types of Alligator soils are located in the vicinity and include Alligator silty clay, 0% - 1% slopes and Alligator silty clay gently undulating (Gray and Ferguson 1974:9). Alligator silty clay, 0% - 1% slopes is the most extensive of the Alligator series and commonly occurs on broad flats. Alligator silty clay, gently undulating occurs in areas of alternating swales and ridges that occur along the margins of broad flats. Slopes are less than 3%. The Alligator silty clay mapping units in Figure 6 also include small areas of Earle, Forestdale and Sharkey soils.

The Sharkey series comprises 36.9% of the acreage in Crittenden County and, prior to modern flood control measures, was flooded nearly every year (USDA 1972:2). The seasonal high water table is normally



Crittenden County

Project Area

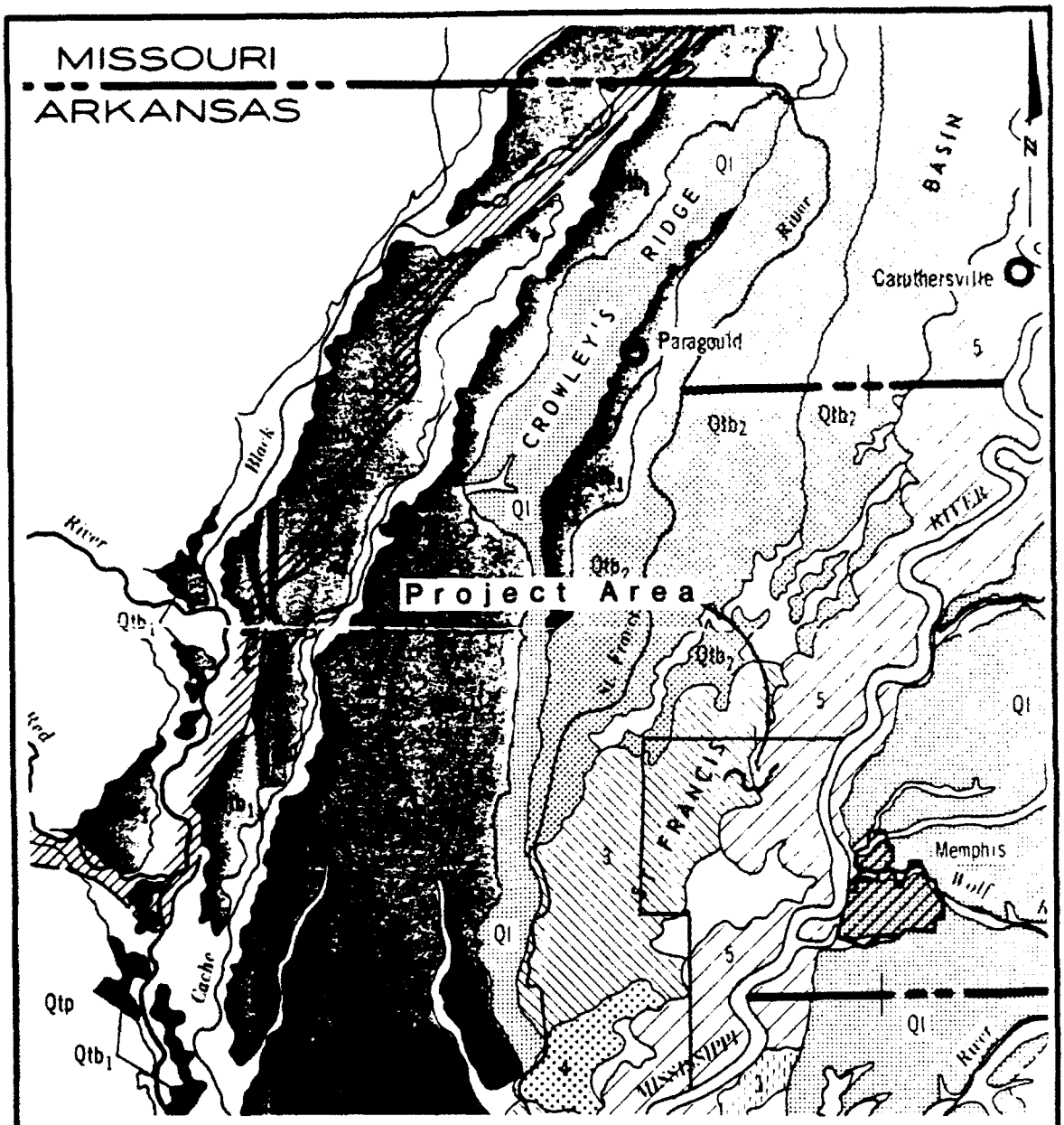
		DIVISION	
INTERIOR HIGHLANDS	UPLANDS	I	OZARK MOUNTAINS, OZARKS a. Salem Plateau — subdivision b. Springfield Plateau — subdivision c. Boston Mountains — subdivision
		II	OUACHITA MOUNTAINS, OUACHITAS a. Arkansas River Valley — subdivision b. Fourche Mountains — subdivision c. Central Ouachita Mountains — subdivision d. Athens Piedmont Plateau — subdivision
GULF COASTAL PLAIN	LOWLANDS	III	WEST GULF COASTAL PLAIN, COASTAL PLAIN a. Southwestern Arkansas — section
		IV	MISSISSIPPI ALLUVIAL PLAIN, DELTA a. Grand Prairie — section b. Northeastern Arkansas — section
	UPLANDS	V	CROWLEY'S RIDGE

PHYSIOGRAPHY

SCALE:		DRAWN BY
DATE: 31 Jan 86	Contract No. DACW66-85-M-1340	REVISED

Natural divisions of Arkansas

Arkansas Department of Planning 1974:15 — Figure 3

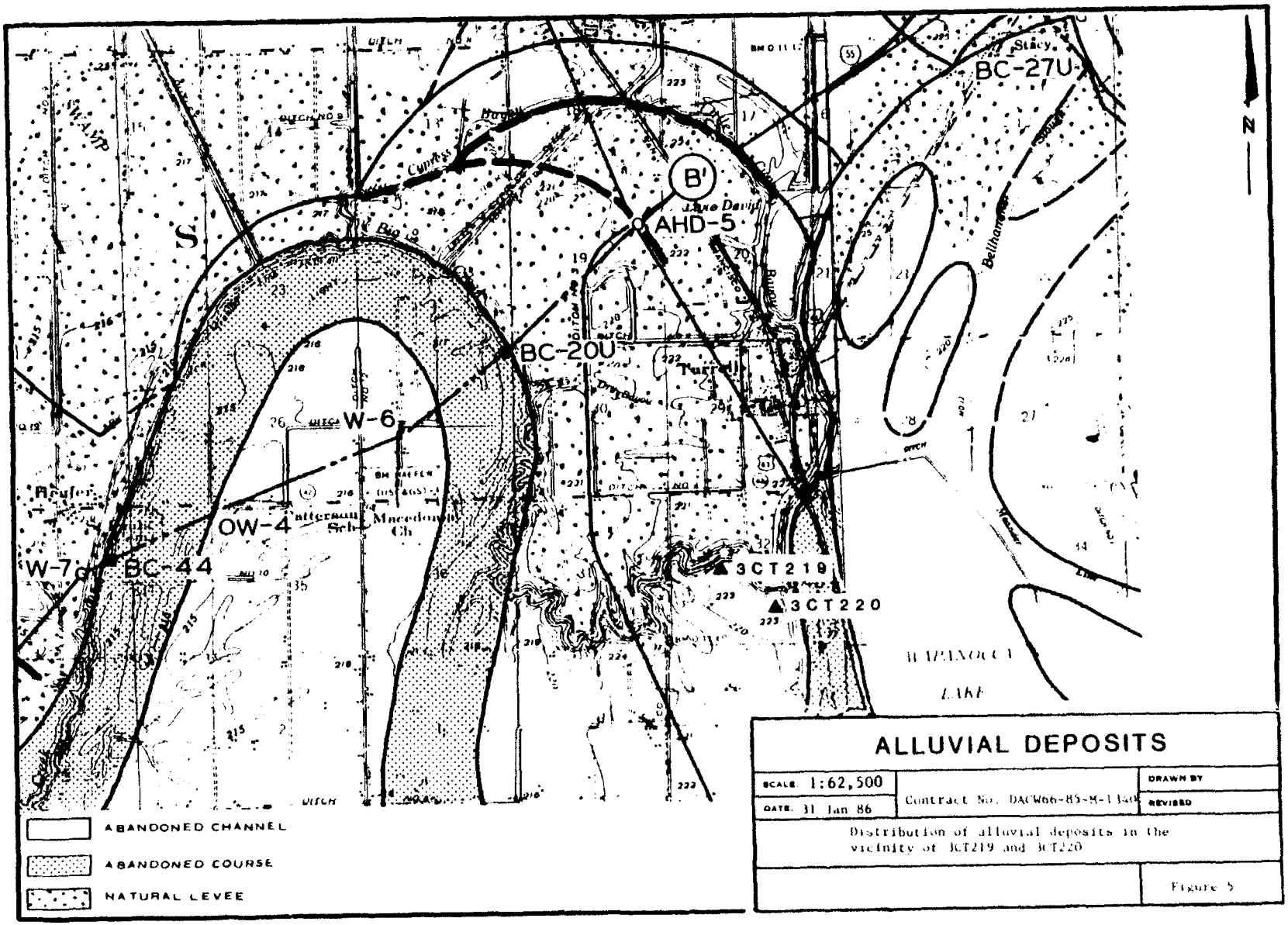


GEOLOGY

SCALE: 1" = 20 mi	Contract No. DACW66-85-M-1340	DRAWN BY
DATE: 31 Jan 86		REVISED

Quaternary geology in the project vicinity

Figure 4

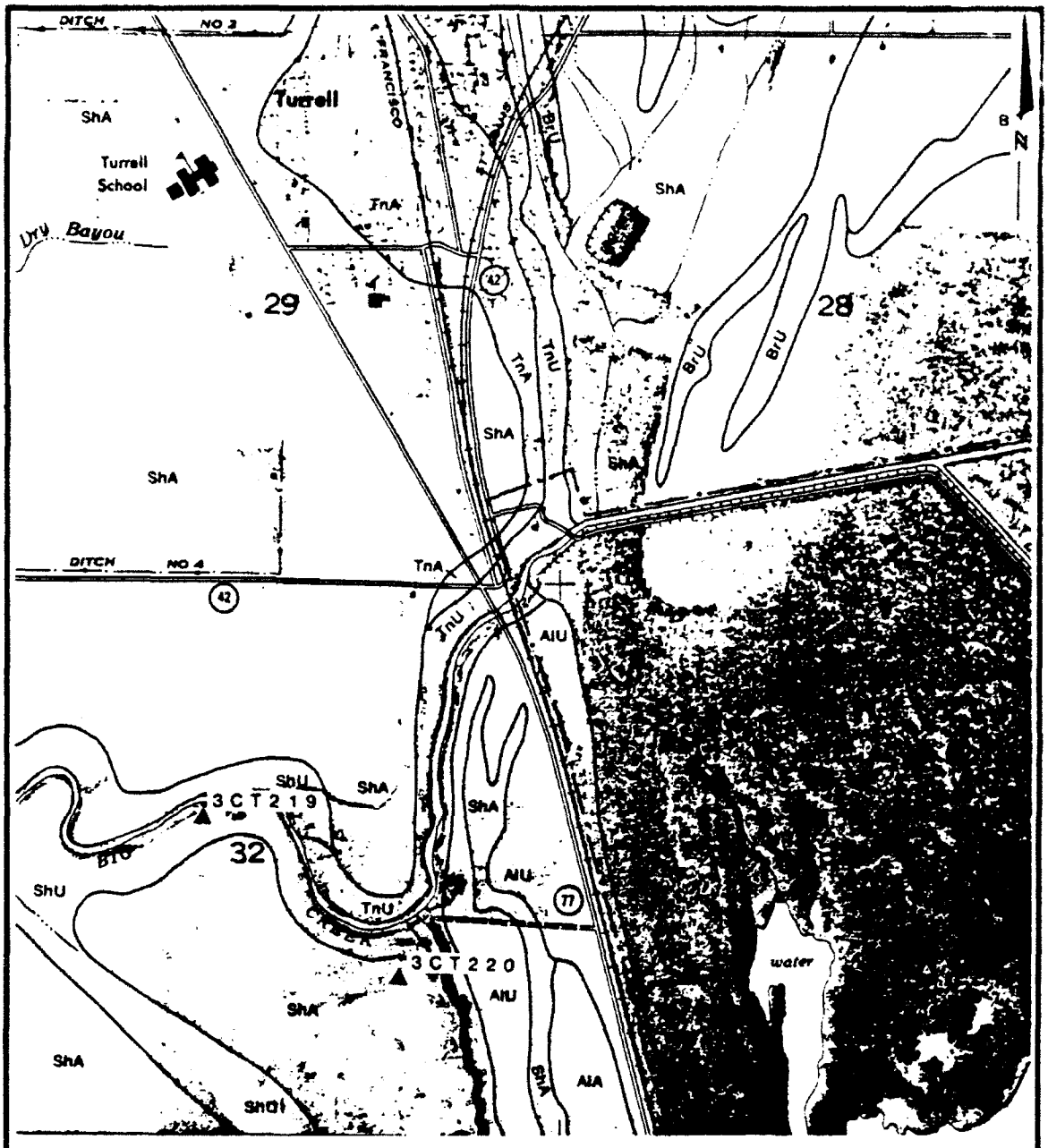


ALLUVIAL DEPOSITS

SCALE 1:62,500		DRAWN BY
DATE 31 Jan 86	Contract No. DACW66-85-M-1130	REVISED

Distribution of alluvial deposits in the vicinity of 3CT219 and 3CT220

Figure 5



SYMBOL	NAME
AlA	Alligator silty clay, 0 to 1 percent slopes
AlU	Alligator silty clay, gently undulating
ShA	Sharkey silty clay, 0 to 1 percent slopes
ShU	Sharkey silty clay, gently undulating
TnU	Tunica clay, gently undulating

SOILS

SCALE: 1:20,000		DRAWN BY
DATE: 31 Jan 86	Contract No. DACW66-85-M-1340	REVISED

Soils in the vicinity of 3CT219 and 3CT220

Figure 6

within 6 inches (15.5 cm) of the surface (Gray and Ferguson 1974:32). The series is described (Gray and Ferguson 1974:20) as:

> . . . poorly drained, level and gently undulating soils in slack-water areas. These soils formed in thick beds of clayey sediments.
>
> In a representative profile, the surface layer is mottled very dark grayish-brown and very dark gray silty clay about 8 inches [20.3 cm] thick. The subsoil is about 40 inches [101.6 cm] of mottled dark-gray and gray clay. Below the subsoil is about 4 inches [10.2 cm] of mottled gray silty clay loam underlain by mottled gray clay.
>
> Sharkey soils are high in natural fertility. Content of organic matter is moderate to high. Permeability is very slow . . . . These soils shrink and crack when dry and expand when wet. . . .

Two types of Sharkey soils are present in the vicinity and include Sharkey silty clay, 0%- 1% slopes and Sharkey silty clay, gently undulating. Sharkey silty clay, 0% - 1% slopes occurs on broad flats. The mapping units in Figure 6 also include small areas of undulating Sharkey soils, as well as Alligator, Bowdre, Mhoon and Tunica soils. Sharkey silty clay, gently undulating occurs in areas of alternating swales and ridges. Slopes are less than 3%. Included in the mapping units on Figure 6 are small areas of Bowdre and Tunica soils.

The Tunica series comprises 10% of the acreage of Crittenden County and, prior to modern flood control measures, was subject to flooding. The seasonal high water table is normally within 6 inches (15.2 cm) of the surface. The series is described (Gray and Ferguson 1974:21) as:

> . . . poorly drained, level and gently undulating soils in broad slack-water areas. These soils formed in thin beds of clayey sediments over coarser textured sediments.
>
> In a representative profile, the surface layer is very dark grayish-brown clay about 4 inches [10.2 cm] thick. The subsoil extends to a depth of about 29 inches [73.7 cm]. The upper part is mottled dark-gray and gray clay about 16 inches [40.6 cm] thick. The lower part is mottled gray silty clay about 9 inches [22.9 cm] thick. Below this is mottled brown sandy loam underlain by yellowish-brown sand.
>
> Tunica soils are moderate to high in natural fertility. Content of organic matter is moderate. . . . These soils shrink and crack when dry and expand when wet.

Only one type of Tunica soil -- Tunica clay, gently undulating -- is present in the immediate vicinity. This soil characteristically occupies areas of alternating ridges and swales. Slopes are less than 3%. Included in the mapping unit shown in Figure 6 are small areas of Mhoon and Sharkey soils.

Cultural Environment

Table 1 outlines the prehistoric sequence in the project vicinity and is based on information presented by Morse and Morse (1983:41-46). Although the regional archeological sequence extends as far back as the Paleo-Indian Period (9500 B.C. - 8500 B.C.), the local sequence is more recent because the land surfaces in the immediate vicinity of 3CT219 and 3CT220 would not have been available for occupation prior to about 6,000 years ago (4050 B.C.). Thus, the earliest occupation to be expected would be during the Hypsithermal or Middle Archaic. Cultural materials recovered during Iroquois Research Institute investigations indicate Baytown (incorrectly interpreted as Middle Woodland, or Marksville by

Table 1
Archeological sequence in the project area

Years B.C./A.D.	Periods	Phases
A.D. 1650 - Present	Euro-American	
A.D. 1350 - 1500	Protohistoric and Late Mississippi	Quapaw Kent Walls Parkin Nodena
A.D. 1000 - 1350	Middle Mississippi	
A.D. 700 - 1000	Early Mississippi	
A.D. 400 - 700	Baytown	Baytown
0 - A.D. 400	Marksville	Helena
500 B.C. - 0	Tchula	
3000 - 500 B.C.	Poverty Point	
7000 - 3000 B.C.	Hypsithermal Archaic	
7500 - 7000 B.C.	Early Corner Notched Horizon	
8500 - 7500 B.C.	Dalton	L'Anguille
9500 - 8500B.C.	Paleo-Indian	

IRI) and Historic period occupations at both sites. The Baytown Period is characterized (Morse and Morse 1983:181-182) as one in which the ceremonialism of the Marksville Period with its associated decorated ceramics and exotic trade items had largely disappeared. Cultural continuity, however, is apparent in utilitarian ceramics and stone tools. Increased population density is suggested by the presence of large numbers of sites that appear to represent the loci of single households. Two ceramic traditions -- sand-tempered in extreme northeast Arkansas and southeast Missouri and grog-tempered in the meander belt and along the lower White River drainage -- continued in existence and may reflect tribal difference because of their almost mutually exclusive distribution (Stewart 1985:189-203).

Three Baytown Period phases -- Baytown, Dunklin and Hoecake -- have been identified in the area. The Dunklin and Hoecake phases are distributed further to the north and need not concern us for purposes of this discussion. Baytown Phase (Morse 1978; Morse and Morse 1983:192-197; Phillips 1970:903) sites are characterized by the presence of Baytown Plain, Mulberry Creek Cord Marked, Yates Net Impressed and Wheeler Check Stamped ceramics and projectile points with expanding bases. While Baytown sites are numerous, relatively few have been investigated and reported in detail (Morse and Morse 1983:181):

> [The Baytown Period] has been little investigated primarily because of a general lack of exotic artifacts and earthworks. Avocational archaeologists have not been attracted to sites characterized mainly by plain broken ceramics. Professional archaeologists have tended to concentrate on the older lithic complexes, such as Dalton, and upon complex societies, such as Mississippian.

Extensive excavations at two sites with Baytown components have been conducted in the Big Creek project area. Excavations at Brougham Lake (3CT98) revealed a small, very late (ca. A.D. 780) Baytown habitation with evidence of at least seven structures (Klinger, et al 1983:208-252). These structures were circular or oval post-in-ground houses that ranged in size from 12.6 m^2 to 26.9 m^2 and averaged 19.96 m^2. Whether only one or several of these structures was occupied at a time (a maximum of only 3 to 4 could have been occupied at the same time) is not known. Subsistence remains (Klinger, et al 1983:439-442, 458-463) revealed a heavy reliance on cultivated foods, including corn (primarily 12 row pop variety), cucurbit, sunflower, sumpweed, maygrass, knotweed and goosefoot. Wild resources (various nuts, sumac, wild bean, sida, grapes, reptile, fish, whitetail deer, squirrel, mouse/rat and bird), together with the cultivated ones, indicate a year round occupation. Little Cypress Bayou (3CT50) was excavated in 1982 by New World Research and appears to represent a similar kind of occupation but the data remain unpublished (Prescott, personal communication).

House's description of the Powell Canal site (3CH14)(1982:91; also cited in Morse and Morse 1983:197) as it may have appeared during its occupation is possibly typical of many Baytown sites:

> Beginning at the bayou, there would no doubt be one or more dugout canoes perhaps tied to poles thrust in the muddy bank. At the top of a steep path leading up the bank would be a house, probably not of very substantial construction. In front of the house would be cooking fires and tools and facilities associated with varied daily tasks and bare ground strewn with ashes, broken pottery, and discarded food scraps. Behind the house would be an area devoted to another activity involving infrequent use of curious round-based pits. Farther back, at the edge of the woods, would be, in a tightly clustered group, the marked graves of ancestors and of contemporaries who died young. At the right season, this encampment would be one of a number of similar encampments lined up in close proximity to one another along this short stretch of the bayou bank.

PREVIOUS INVESTIGATIONS

Investigations Conducted in Crittenden County

A considerable amount of archeological work has been completed in northeast Arkansas in recent years, particularly in the St. Francis Basin. A list of 35 projects completed in Crittenden County was provided by the Office of the State Archeologist and is summarized in Table 2. Professional archeological work has been conducted in the county for 105 years but the pace has increased dramatically since 1975. This may be somewhat misleading, however, because the scope of most of the cultural resource management work is far less than that of many of the early projects and has tended to be oriented toward non-research goals.

Table 2
Archeological projects completed in Crittenden County, Arkansas

Dates of Fieldwork	Project Name	Sponsoring Agency	Type of Work	Report(s)
1881-82	Ark. mounds survey	Smithsonian Institution	Survey	Thomas (1894), Palmer (1917)
1910	Survey of St. Francis White & Black rivers	Philadelphia Acad. of Sci.	Survey & Excavation	Moore (1910)
1932	Eastern Ark. survey	University of Arkansas Museum	Survey	Dellinger & Dickenson (1940)
1940-47	Lower Miss. Alluvial Valley survey	Harvard Univ. & American Museum of Natural Hist.	Survey & Testing	Phillips, Ford & Griffin(1951)
1957	Banks Village	Gilcrease Foundation	Excavation	Perino (1966)
1960	Cherry Valley Mound and Banks Mound 3	Gilcrease Foundation	Excavation	Perino (1967
1967	Glover Site (3CT37)	Ark. Arch. Sur.	Excavation	Morse (19__)
1975	Ten Mile Bayou	Memphis COE	Survey	Reed (19__)
1975	Fifteen Mile Bayou	Memphis COE	Survey	Smith (1976)
1976	Bledsoe Berm	Memphis COE	Survey	McClurkan (1976
1977	W. Memphis Recreation Complex	City of West Memphis	Survey	Morse (19__)
1978	Big Creek, Item 1	Memphis COE	Survey	Dwyer (1978)
1978	Wapanocca National Wildlife Refuge	Heritage Conservation & Recreation Service	Survey	Jackson (1979)
1978	Big Creek, Item 1 (Sta 0+00-50+60)	Memphis COE	Survey & Testing	LeeDecker (1979c)
1978	Blackfish Bayou, Items 2 & 3	Memphis COE	Survey & Testing	LeeDecker (1979a)
1979	Big Creek, Item 2	Memphis COE	Survey & Testing	LeeDecker (1979b)
1979	West Memphis-Memphis metropolitan area	Memphis COE	Survey	Kern (1981)
1979	Mississippi River Berms	Memphis COE	Survey & Testing	Heartfield & Waddell (1983)
1980	Big Creek, Item 1 (Sta 50+60-196+00)	Memphis COE	Survey & Testing	LeeDecker (1980a)
1980	Big Creek, Item 1 (Sta 196+00-563+00)	Memphis COE	Survey & Testing	LeeDecker (1980b)
1980	Big Creek Testing	Memphis COE	Testing	Klinger, et al (1982)
1980	West Memphis airport	City of West Memphis	Survey	Cande (1980)
1980	Berry Cemetery (3CT47)	Memphis COE	Mitigation	Klinger, Cochran and Dollar (1983)
1980	Brougham Lake (3CT98)	Memphis COE	Mitigation	Klinger, Imhoff and Cochran (1983)
1981	Bauzippi-Wyanoke Revetment	Memphis COE	Survey	McNeil (1981)
????	Mississippi R. Berm	Memphis COE	Survey	Nixon (1982)
1981	W. Memphis sewer	City of West Memphis	Survey	Waddell (1980)
1983	Lambethville	Vicksburg COE	Testing	Clendenen (1983?)
1983	Gilmore City Park	City of Gilmore	Survey	Martin (19__)
1983	Porter Lake levee	Memphis COE	Survey	HP&G (19__)
1984	3CT223	Memphis COE	Testing	McNeil (1984)
1984	Lower St. Francis	Ark. Arch. Sur.	Survey	House (19__)
1985	Riverside Slide	Memphis COE	Survey	McNeil (1985a)
1985	Poker Point Slide	Memphis COE	Survey	McNeil (1985b)

Investigations Conducted in the Big Creek Project Area

Site Survey

Archeological work conducted under contract with the Memphis District along Big Creek has entailed the full range of archeological work from site surveys through test excavations and mitigation through data recovery. The initial work was conducted along the Item 1 project area over a 17 day period in 1978 by Science Applications, Inc. (SAI). The results of their work was summarized in the abstract to the report (Dwyer 1978:ii):

> The survey of the proposed Big Creek Enlargement and Diversion Project, Crittenden County, Arkansas produced collections from forty-five prehistoric sites. Fifteen of the prehistoric sites also contained historic material. It is apparent that two of these sites (3CT"01" and 3CT"022"), and possibly three additional sites (3CT"09", 3CT"033", and 3CT"034"), will be adversely impacted by project implementation, and mitigative action is recommended for all five of these sites. While the primary mitigative action recommended is site avoidance, the proposed construction activities earmarked on project maps 41H/31 (2) and 41H/33 (2) indicate that site avoidance may not be a viable option concerning 3CT"01" and 3CT"022". It is therefore further recommended that additional mitigative options, to include excavation, be considered for 3CT"01" and 3CT"022". There is no evidence that any sites of historical or architectural value will be directly or indirectly impacted.

Following unfavorable reviews of the Science Applications report by the State Archeologist, Interagency Archeological Services and the Memphis District, it was decided that the fieldwork and report were not adequate to meet the needs of the district. Therefore, a contract was awarded to Iroquois Research Institute (IRI) for a resurvey of the Item 1 project area and testing of the sites found. The first mile (project stations 0+00 through 50+60) of the project was resurveyed in late September or early October 1978 and the results summarized as follows (LeeDecker 1979c:iii):

> Seven sites have been located within the first segment of the project. They include five prehistoric components, five historic components, and two architectural components. Two sites (3CT47 and BC1#5) are associated with George Berry Washington, a black farmer, preacher, and merchant who was an important person in the project area during the late 19th and early 20th centuries. One prehistoric site, the Berry Cemetery site (3CT47), was a major occupation site during the Late Archaic, Woodland, and Mississippian Periods. Archaeological testing at this site indicates that it may yield data which could be used to answer many important questions regarding northeastern Arkansas prehistory. Sites 3CT47 and BC1#5 may be eligible for the National Register of Historic Places, and both sites will be adversely impacted by the planned construction. Therefore it is recommended that the Corps of Engineers take immediate action to insure that significant cultural resources are not destroyed.

Fieldwork for Item 2 was conducted during May of 1979. The results of this work are summarized by LeeDecker (1979b:iii) as follows:

> . . . Nine sites were identified during the field examination, one of which was previously listed in the site files of the Arkansas Archeological Survey. The major prehistoric occupation of the project area occurred during the Woodland Period; however, there is evidence of Middle to Late Archaic and Early to Middle Mississippian Period occupations. Two architectural properties were inventoried, both of which are shelters for

irrigation pumps. Three historic archaeological components were located, and all were identified as remains of 20th century occupation sites or agricultural outbuildings.

The entire project area is within the Meander Belt Physiographic Zone, and the survey results indicate occurrence rates of 8.9 prehistoric sites per square mile, 3.8 historic archaeological sites per square mile, and 2.6 architectural sites per square mile. All types of sites occurred much more frequently within the Point Bar Depostis [sic] than in the Abandoned Channels and Courses, the two principal sub-divisions of the Meander Belt Physiographic Zone. These data may be useful in the development of a predictive model for cultural resources within the entire St. Francis River Basin.

Although no sites listed in the National Register of Historic Places will be affected by the project, three sites located during the field survey are considered potentially eligible for the National Register. The proposed channel excavation project will have no effect on one of the properties, but the other two may be partially destroyed by construction. Options proposed for mitigation of adverse effects include avoidance of the sites during construction, archaeological data recovery, and in situ preservation.

Fieldwork for the second stage of Item 1 (project stations 50+60 through 196+00) was conducted during January and February of 1980. The results of this work are summarized by LeeDecker (1980a:4; citations have been omitted):

Five cultural resource sites have been identified in the study area by the Iroquois Research Institute field crews. One site, BC1 #22 contains both prehistoric and historic components; two sites, BC1 #7 and BC1 #32, contain prehistoric components exclusively; and two sites, BC1 #9 and BC1 #11, contain historic components exclusively; two sites BC1 #9 and BC1 #11 contain historic components exclusively. No architectural resources were located in the study area discussed in this interim report.

A total of 14 sites were inventoried by Science Applications, Inc. between stations 50+60 and 196+00 of the Big Creek, Item 1 right-of-way. Their report indicates that sites 3CT"08," 3CT"09," and 3CT"020" are within the project right-of-way. They reported that 11 sites are outside the project right-of-way: 3CT"010," 3CT"011," 3CT"012," 3CT"013," 3CT"014," 3CT"015," 3CT"016," 3CT"017," 3CT"018," 3CT"019," and 3CT"021." Of the three sites identified by them as being inside the project, 3CT"08" could not be located, 3CT"09" was located and tested, and 3CT"020" was determined to be outside the right-of-way.

Of the 11 sites identified by them as being outside the project area, all but two were located by Iroquois Research Institute and confirmed to be outside the right-of-way. Site 3CT"014" could not be located by Iroquois Research Institute and site 3CT"018" was determined to be partially within the right-of-way and was subsequently tested.

Site 3CT"08" could not be located by Iroquois Research Institute field crews. It had been described as an isolated find consisting of one large biface. Site 3CT"014" also could not be located. It had been described as an extremely small site which yielded eight sherds, two pieces of fired clay, one piece of debitage, one piece of fire cracked rock, and four brick fragments. The site had been interpreted as a possible small Early Woodland camp.

The survey of the portion of the Item 1 project area between stations 196+00 and 563+00 took place between January and May of 1980. The results of the survey are summarized by LeeDecker (1980b:5-7; citations have been omitted) as follows:

Seventeen sites were examined by Iroquois in this segment of the Big Creek project, including 16 prehistoric components, eight historic archaeological components, and one historic architectural component. Three of the sites, including three prehistoric components and one historic archaeological component, were determined during site verification procedures to be outside the right-of-way. . . .

Science Applications, Inc. identified 23 sites in this segment of the Big Creek, Item 1 project area and the Iroquois Research Institute field

crews attempted to verify the location of each of these sites.

Ten of the 23 sites identified by SAI were reportedly within the right-of-way: 3CT98 3CT99, 3CT100, 3CT101, 3CT109, 3CT110, 3CT114, 3CT115, 3CT116 and 3CT117. During Iroquois' examination of the study area it was determined that five of these sites -- 3CT98, 3CT99, 3CT114, 3CT115 and 3CT117 -- are inside the right-of-way, and four sites -- 3CT100, 3CT101, 3CT109 and 3CT110 -- are outside the right-of-way. One site, 3CT116, could not be located; it was described as a small camp at which very little material was present.

Thirteen of the 23 sites identified by SAI were reportedly outside the right-of-way: 3CT102, 3CT103, 3CT104, 3CT105, 3CT106, 3CT108, 3CT111, 3CT112, 3CT113, 3CT118, 3CT119, 3CT120 and 3CT121. During Iroquois' examination of the area, it was determined that two of these sites, 3CT119 and 3CT120, are inside the right-of-way and ten of these sites -- 3CT102, 3CT103, 3CT104, 3CT105, 3CT106, 3CT108, 3CT111, 3CT112, 3CT113 and 3CT121 -- were verified to be outside the right-of-way. One site, 3CT118, could not be located; this site was described as a very small camp with very little cultural material present.

The eight historic components between stations 196+00 and 563+00 are BC1 #12, BC1 #14, BC1 #17, BC1 #18, BC1 #19, BC1 #20, BC1 #23 and BC1 #24. . . .

The data accumulated during the Science Applications and Iroquois Research Institute surveys are confusing at best. All of the reports produced normally use temporary site numbers assigned while in the field instead of the state site numbers, making it difficult to determine exactly how many sites were recorded and how the SAI and IRI field numbers relate to each other. Finally, the IRI reports do not discuss the sites located outside the project boundaries, thereby excluding a fairly large body of useful information.

Additional Testing and Data Recovery

Subsequent to the SAI and IRI work, two contracts for additional testing and mitigation were awarded by the Memphis District to Historic Preservation Associates and New World Research. In July 1980 HPA conducted data recovery operations at Brougham Lake (3CT98), additional fieldwork and historic documentation at Berry Cemetery (3CT47) and test excavations at 3CT53, 3CT100, 3CT213 and 3CT215. The work at 3CT98 is summarized by Klinger, Imhoff and Cochran (1983:i) as follows:

> Data recovery at Brougham Lake (3CT98) was undertaken pursuant to the Memphis District, Corps of Engineers cultural resources responsibilities for National Register eligible sites. Complete excavation of at least 80% of the 3,404.5 m^2 area of occupation was accomplished. All data generated during the course of the recovery program, as well as all available previously collected data were analyzed in detail and are presented by provenience unit. Evidence representing late Archaic, Tchula, baytown and Mississippi Period activities was found along with at least seven Baytown, one indeterminant Mississippi and two middle Mississippi structures. It is believed that these structures represent farmsteads occupied year-round; the association of corn with both the Baytown and Mississippi Period occupations is clear. it is also suggested that at least some specialized activities occurred at the site during the late Mississippi Period. Data from these investigations are integrated into the regional framework by a comparison of faunal remains, floral remains, artifacts structures, chronometric dates and 1 km catchments with vicinity sites. All records and artifacts generated as a result of these investigations are available for further study at the University of Arkansas Museum, Fayetteville, Arkansas.

At the Berry Cemetery site, relatively little fieldwork was conducted but all of the accumulated data were assembled and reported

upon. The results are summarized by Klinger, Cochran and Dollar (1983:iv):

> The investigations described in this report focus on an archeological and historical synthesis of the Berry Cemetery [site] (3CT47) as a part of a cultural resources mitigation program conducted by the Memphis District, Corps of Engineers. All previously collected and available data relating to the prehistoric components of the site are synthesized and Late Archaic, Baytown, Indeterminant Mississippi and Parkin Phase components are documented. A narrative is presented focusing on George Berry Washington, a prior owner of the site and a man whose grave provides it with a permanent marker. Based on the data collected and assessed it is concluded that 3CT47 is significant in light of its prehistoric characteristics. The site is not significant by simple association with George Berry Washington. Only a small portion of the northern part of the site has been adversely effected by Corps of Engineers construction activities. These impacts have been adequately mitigated through the investigations documented herein. No recommendations for further Corps of Engineers - sponsored work at 3CT47 are made.

Test excavations at 3CT53, 3CT100, 3CT213 and 3CT215 (Klinger and Imhoff (1982) revealed that 3CT53, previously determined to be eligible for inclusion on the National Register, was outside the project limits. 3CT215 was also determined to be eligible but was well outside the project boundaries. 3CT100, a prehistoric site, and 3CT213 an historic site, were both determined to be ineligible for inclusion on the National Register.

Previous Investigations at 3CT219 and 3CT220

3CT219 and 3CT220 were recorded and tested by Iroquois Research Institute during the survey of the Item 2 project area. The work at these sites is described by LeeDecker (1979b:75-77) as follows (citations and references to tables and figures have been omitted):

> BC2 #2 [3CT219]
>
> This prehistoric site was discovered during a walkover transect survey in a harvested soybean field on an old river terrace. The site occupies a level piece of land adjacent to a slight bend in Big Creek. After preliminary examination of the site area, the location was recorded and a datum stake was placed near the site.
>
> When a crew returned to the site for intensive site examination and testing, a grid origin was established in the center of the site and two perpendicular rows of 10 x 10 meter squares were laid out across the site area. Systematic and selective surface collections were made within the gridded area following the standard field procedures. A total of 800 square meters were included in the gridded area and the mean artifact density within this area, as calculated from the recovery in the intensively collected 2 x 2 meter units was 0.5 artifacts per square meter. The total site area was estimated to be approximately 4,900 square meters, all of which is within the project right-of-way.
>
> One test excavation was opened in an area of relatively high surface artifact density (9S,40W) in order to ascertain the subsurface extent of the site. The test pit was excavated to a depth of 30 centimeters and was terminated after 20 centimeters of sterile soil were removed. A single artifact, a piece of chert debitage, was recovered from the uppermost level of the excavation unit.
>
> The soil exposed in the vertical profile was a uniform, very dark grayish brown (10YR3/2), moist, friable, angular, blocky silty clay with fine mottling and numerous root inclusions. The plowzone (Stratum I) extended to a depth of 10 centimeters below the ground surface. Stratum II extended from the base of the plowzone to the floor of the excavation and was more moist and compact than Stratum I.

. . . Ceramics comprise 96% of the total assemblage of prehistoric artifacts. The majority of the collection consists of Baytown Plain sherds although a few Mulberry Creek Cord Marked and untypable grog tempered sherds were recovered. Only four lithic artifacts were collected from the site, two flake tools, one piece of debitage, and one cobble tool. The cobble tool is a peculiar, naturally shaped, rod-like stone which is battered on one end and has a roughly flaked cutting edge on the other end; it appears to have been a multi-purpose tool. Thirty unmodified mollusk shell fragments, probably of recent origin, were also collected from the site.

Based on the identification of Baytown Plain and Mulberry Creek Cord Marked ceramics, it appears that prehistoric utilization of the site was limited to the Woodland Period. The small size of the site and the limited amount of artifactual material suggest a short period of occupation by a small group.

A few historic artifacts were observed at the site including one brick fragment, bottle glass, and buff earthenware ceramics. The 1957 and 1977 quadrangle maps do not indicate a structure at this location, and there is insufficient field evidence to record a historic component at this site.

BC2 #3 [3CT220]

This prehistoric and historic site was discovered during a walkover transect survey in a harvested soybean field. The site occupies a ridge which is roughly parallel to the Big Creek channel. After preliminary examination of the site, its location was recorded for subsequent site examination and testing.

Site examination procedures commenced by establishing a grid origin in the approximate center of the artifact scatter. Systematic and selective surface collections were made within two perpendicular rows of 10 x 10 meter grid units which covered a total area of 1,100 square meters. In addition, a few diagnostic artifacts were collected from outside the gridded area and their provenience was recorded by reference to the established surface grid. The mean surface artifact density calculated from the recovery within the intensively collected 2 x 2 meter units is 0.69 artifacts per square meter. Artifact concentration was higher at the crest of the ridge than on the slope. Prehistoric artifacts were scattered over a total area estimated to be 5,100 square meters, all of which is within the project right-of-way.

To assess the subsurface extent of the site, a 1 x 1 meter test excavation was placed in the area of the highest surface artifact concentration (30S,1E). Excavation continued to a depth of 30 centimeters below the ground surface and was terminated after two sterile levels were excavated. All the recovered materials were from the plowzone and consist of three Baytown Plain sherds and one glass fragment.

The soil in the test pit was an extremely firm, moist clay. The plowzone (Stratum I) extended to an average depth of 8 centimeters and was a silty clay with a dark grayish brown (10YR3/2) color. Stratum II extended from the base of the plowzone to the floor of the test pit and was characterized as a dark grayish brown (10YR4/2) clay. Stratum III was a dark gray (10YR3/1) clay lens with a maximum thickness of 15 centimeters which extended between Strata I and II, and faded halfway across the test pit wall. Stratum III exhibited a swirling soil pattern and had the smell of decaying organic matter which suggests a relatively recent depositional episode.

. . . Ceramics account for the majority of the prehistoric artifact assemblage and the ceramic assemblage includes Baytown Plain (78%), Evansville Punctate (5%), Mulberry Creek Cord Marked (2%), untypable grog tempered sherds (14%), and fired clay (1%). The lithic assemblage includes bifaces, flake tools, and debitage. The lithic materials represented include Crowleys Ridge chert, Crescent Quarry chert, Burlington chert, oolitic chert, quartzite, and unidentified chert.

All the diagnostic artifacts identified in the collection indicate occupation of the site during the Woodland Period. Baytown Plain, Mulberry Creek Cord Marked, and Evansville Punctate ceramics may occur throughout the Woodland Period. Two of the bifaces are morphologically similar to the Manker and Snyders points. Those points have a Middle Woodland association and are made of Crowleys Ridge chert. Based on the small size of the site and the low artifact content, this site may have been used by a small group of individuals as a seasonal or semi-permanent camp.

Historic artifacts observed at the site were concentrated on the crest of the rise. The historic artifact assemblage includes bottle glass, window glass, stoneware ceramics, brick, and machined nails. There is no structure indicated at this location on the 1957 and 1977 quadrangle maps;

however, the son of the present landowner indicated that a house one occupied the site. The assemblage suggests an early 20th century date of occupation.

Neither of the sites was determined to be eligible for nomination to the National Register of Historic Places and no further archeological work was recommended.

METHODOLOGY

Field Methods

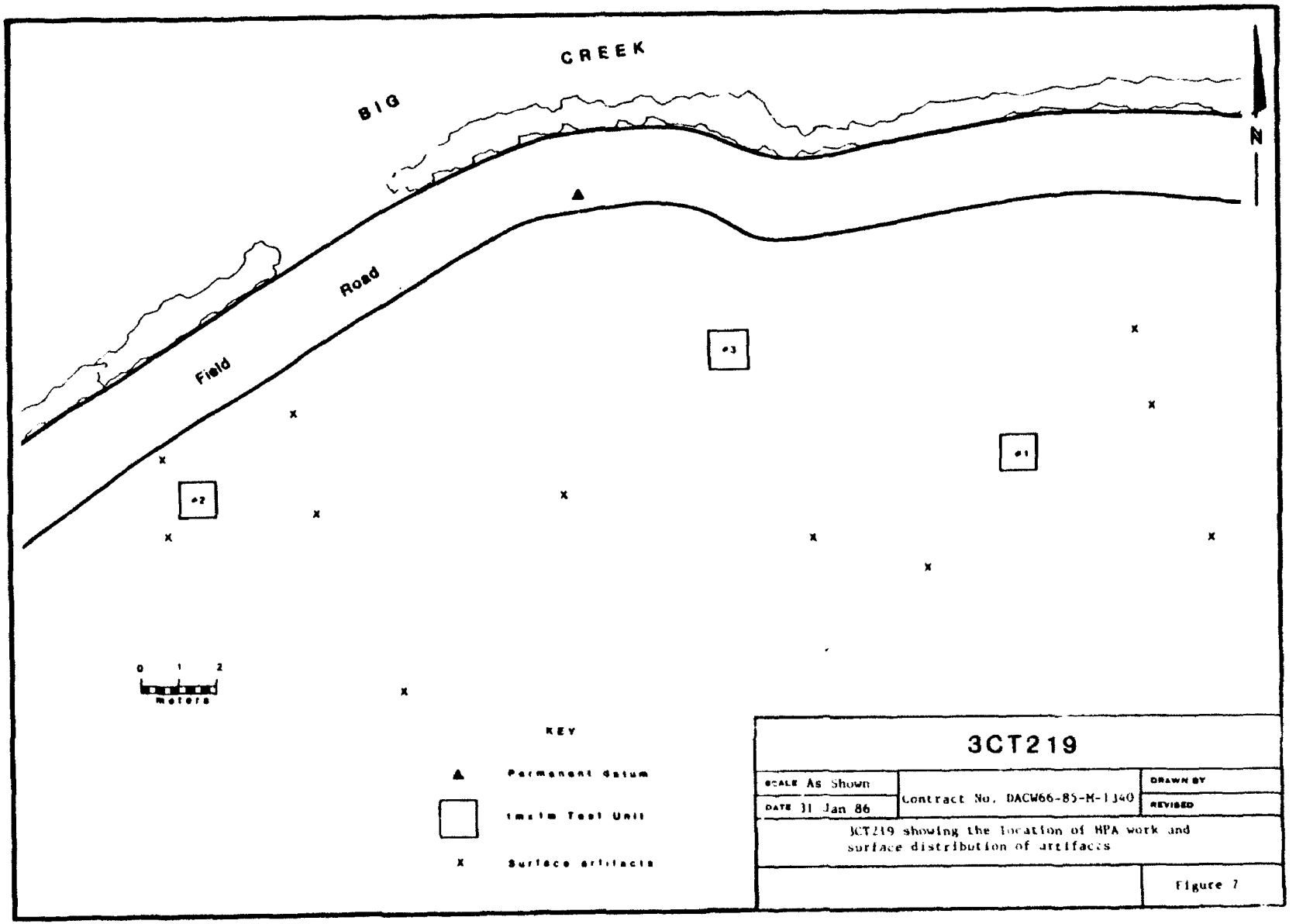
The data collection methods used in the field were designed to conform to the requirements set forth in the Scope of Work in so far as field conditions permitted. Primary activities involved the collection of surface artifacts and the excavation of three 1 m x 1 m test units at each of the sites (Figures 7 and 8). In addition, a permanent datum, consisting of a steel reinforced concrete post topped with a brass cap, was placed at each site with the site number stamped into it. Mapping sufficient to plot the site on project blueline drawings and HPA's work in relation to the planned construction was also undertaken.

Surface Data Retrieval

All prehistoric artifacts visible on the surface of both sites were marked with wire flags and their locations mapped with a transit, taking distance and elevation readings from a metric stadia rod. Measuring distances with a tape was not possible because of the soybean crop in place at the time. No historic artifacts were present on the surface of 3CT219. At 3CT220 historic materials were too numerous to piece plot, and the soybean plants were too large to permit the establishment of a collection grid. Therefore, the farm road was used to divide the site into north and south portions and an east-west baseline was established 30 m south of the permanent datum. Thirty meter long north-south collection transects were then established along the crop rows on either side of the baseline and perpendicular to it. The rows were planted at 24 inch (61 cm) intervals; thus, transect E5S is five rows (3.05 m) east of the road on the south side of the baseline. Finally, a general collection was made of artifacts exposed in the farm road in the vicinity of the 3CT220 datum.

Subsurface Data Retrieval

Three 1 m x 1 m test units were excavated in arbitrary 10 cm levels at each site with vertical control maintained using a line level and metric tape. The soil proved to be extremely difficult to excavate and screen through the required $\frac{1}{4}$" mesh. Normal excavation techniques, such as shovel skimming or troweling, were not possible, requiring the use of a pick-mattock, roundpoint shovel or rice shovel to break up the soil. In addition, much of it could not be forced through the screen and had to be broken up by hand and searched through for the presence of artifacts. Planviews and profiles were drawn as needed but included at

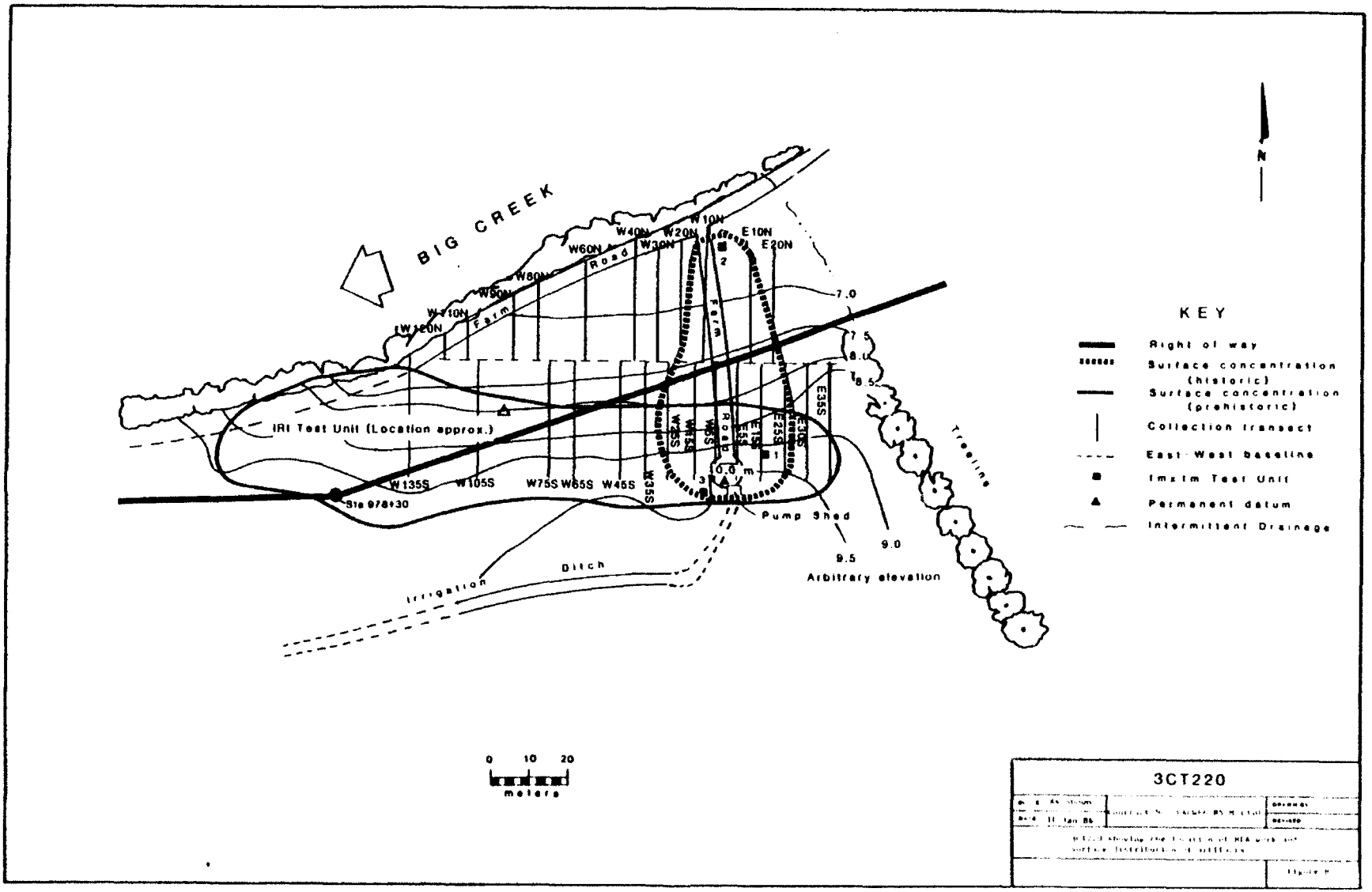


3CT219

SCALE As Shown	Contract No. DACW66-85-M-1340	DRAWN BY
DATE 31 Jan 86		REVISED

3CT219 showing the location of HPA work and surface distribution of artifacts

Figure 7


BIG CREEK
W40N
W20N
W10N
E10N
E20N
W60N
W30N
Road
W80N
W50N
W10N
W20N
Farm
Farm
7.0
7.5
8.0
8.5
IRI Test Unit (Location approx.)
W135S
W105S
W75S
W65S
W45S
W35S
W25S
W15S
W5S
Road
E5S
E15S
E25S
E35S
Treeline
Site 07814-30
0.0 m
Pump Shed
9.0
9.5
Arbitrary elevation
Irrigation
Ditch
KEY
Right of way
Surface concentration (historic)
Surface concentration (prehistoric)
Collection transect
East-West baseline
1mx1m Test Unit
Permanent datum
Intermittent Drainage
N
0 10 20
meters
3CT220

least one profile drawing of each test unit after excavation was completed.

At 3CT219 each unit was excavated in five levels to a maximum depth of 50 cm. Levels 4 and 5 in all three units were stepped down to 40 cm x 40 cm in the northeast corner of units 1 and 2 and the southwest corner of unit 3.

At 3CT220 the cultural deposits were much deeper. Test unit 1 was excavated in ten levels to a depth of 1 m. Levels 9 and 10 were stepped down to 30 cm x 30 cm in the northwest corner of the unit. Feature 1 in level 6 was excavated separately and the fill bagged for finescreen processing in the HPA laboratory. Test unit 2 was excavated in six levels to a depth of 60 cm. Levels 5 and 6 were stepped down to 30 cm x 30 cm in the northwest corner of the unit. Test unit 3 was excavated to a depth of 1.1 m in eleven levels. A 25 cm x 25 cm block was removed from the northeast corner of levels 2 through 9 for finescreen processing. Levels 10 and 11 were stepped down to 30 cm x 30 cm in the northeast corner of the unit.

Laboratory Methods

Samples for finescreen processing were soaked in water for a period of two to five days to break down the soil and screened through 1/16" mesh window screen in the HP' laboratory. Flotation was not successful because of the high clay content in the soil. All artifacts were washed, numbered and placed in museum storage boxes immediately after being brought in from the field. Prehistoric sherds were washed but not scrubbed to avoid damage to the surfaces. The artifacts were then sorted, counted, weighed (in grams) and each analytical unit assigned a catalog number and bagged separately.

The prehistoric materials were sorted into analytical categories established previously (Klinger, Imhoff and Cochran 1983:101-110). Lithics were assigned to appropriate tool types and waste flakes sorted into categories that reflect a sequence of reduction from raw materials to finished tools. Ceramics were classified into types established for the Mississippi Valley (Phillips, Ford and Griffin 1951; Phillips 1970) or according to tempering agent in the case of specimens that could not be assigned to a type. The historic materials were sorted into categories such as bottle glass, window glass, ceramics, metal and various kinds of building materials.

RESULTS

3CT219

Data Recovered from the Surface and 1 m x 1 m Test Units

Only 17 Baytown Plain sherds were visible on the surface of 3CT219 (Table 3) encompassing an area of about 10 m (N/S) x 25 m (E/W). No prehistoric lithics or historic artifacts were visible and no patterning in the distribution of the ceramics was apparent.

The test units were as unproductive as the surface materials suggested they should be. Excavated materials were recovered only from

Table 3
Surface artifacts from 3CT219

Provenience	Baytown Plain Ct.	Wt(g)
S05.48/E15.14	1	3.7
S05.77/W07.54	2	9.7
S05.94/W13.88	1	7.5
S06.99/W10.96	1	3.5
S07.99/W00.29	1	2.3
S08.43/W06.91	1	1.8
S08.70/W09.66	1	5.3
S08.78/W10.90	1	10.1
S09.05/E06.26	1	2.3
S09.46/E16.48	1	2.6
S09.78/E09.31	4	9.6
S13.26/W04.49	2	3.9
TOTAL	17	62.3

the first 10 cm level of two of the three units (Table 4). Level 1 of test unit 1 yielded 10 Baytown Plain sherds, 3 unidentifiable sherds made of Baytown paste, 1 Mulberry Creek Cord Marked sherd and a wire nail. Level 1 of test unit 2 contained 5 Baytown Plain sherds and a fragment of amber bottle glass. Test unit 3 yielded no cultural materials.

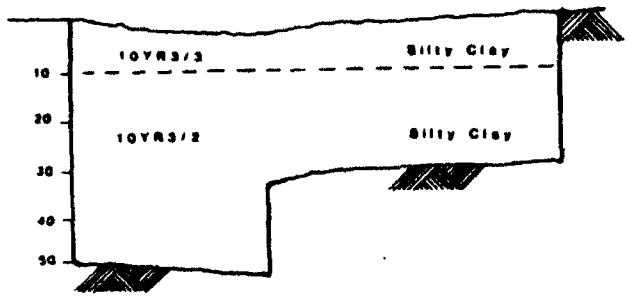
No cultural stratigraphy was visible in any of the test units (Figure 9). In all three units the soil consisted of a dark brown (10YR3/3) silty clay that graded into a very dark gray (10YR3/2) silty clay about 40 cm below the surface.

3CT220

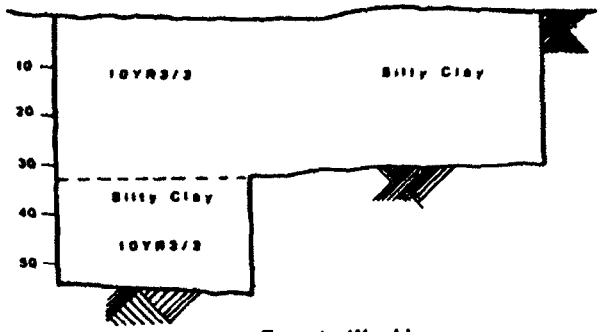
Data Recovered from the Surface

Unlike 3CT219, surface artifacts at 3CT220 were abundant (tables 5, 6 and 7). One hundred fifty-seven prehistoric artifacts were piece plotted and were composed of 67 (42.7%) Baytown Plain sherds, 18 (11.5%) Mulberry Creek Cord Marked sherds, 18 (11.5%) particles of burned clay, 16 (10.2%) interior flakes, 9 (5.7%) pieces of shatter, 10 (6.4%) retouch flakes, 5 (3.2%) secondary decortication flakes, 4 (2.5%) broken flakes, 3 (1.9%) cores, 3 (1.9%) unidentified sherds of Baytown paste, 1 (0.6%) unidentified grog-tempered incised sherd, 1 (0.6%) unidentified sand-tempered sherd, 1 (0.6%) dart point, and 1 (0.6%) primary decortication flake.

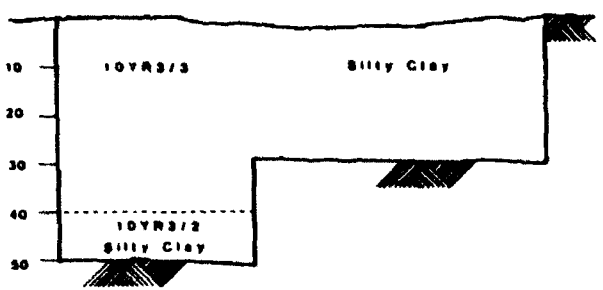
The dart point is manufactured from a large flake of very light gray to white chert and measures 47.95 mm x 34.40 mm x 8.55 mm (length x width x thickness). It has a broad blade with excurvate edges that are ground. One side has a spokeshave-like notch that is probably fortuitous. The shoulders are rounded and sloping but appear slightly damaged and may have been pointed. The stem contracts to a rounded



East Wall
Test Unit 1



East Wall
Test Unit 3



East Wall
Test Unit 2

3CT219 PROFILES

SCALE As Shown	Contract No. DACW66-85-M-1340	DRAWN BY
DATE 31 Jan 86		REVISED

Profile drawings of 1 m x 1 m test units at 3CT219

Figure 9

Table 4
Artifacts recovered from 1 m x 1 m test units at 3CT219

Artifact Type	Test Unit 1 0cm - 10cm Ct.	Wt.(g)	Test Unit 2 0cm - 10cm Ct.	Wt.(g)
Baytown Plain	10	92.3	5	17.8
Baytown Paste	3	6.6		
Mulberry Creek Cord-marked	1	23.8		
Metal	1	3.2		
Bottle Glass - Amber			1	2.8
TOTAL	15	125.9	6	20.6

base. This specimen most closely resembles the Gary type (Perino 1984:144) which dates between 1200 B.C. and A.D. 1700.

One hundred forty prehistoric artifacts were recovered as part of the general surface collection and include 42 (30.0%) unidentified sherds made of Baytown paste, 34 (24.3%) Mulberry Creek Cord Marked sherds, 33 (23.6%) Baytown Plain sherds, 23 (16.4%) particles of burned clay, 2 (1.4%) incised Baytown paste sherds, 2 (1.4%) interior flakes, 1 (0.7%) primary decortication flake, 1 (0.7%) retouch flake, 1 unidentified decorated sherd (0.7%) and 1 (0.7%) sand/grog tempered sherd.

Two hundred thirty-two items were recovered during the systematic collection of historic materials and include 154 (66.4%) sherds of bottle glass, 24 (10.3%) sherds of flat window glass, 18 (7.7%) sherds of plain whiteware, 12 (5.2%) fragments of brick, 9 (3.9%) metal items, 5 (2.1%) sherds of earthenware, 3 (1.3%) sherds of porcelain, 2 (0.9%) sherds of milk glass, 2 (0.9%) sherds of opal glass canning jar lid, 2 (0.9%) pieces of bakelite plastic and 1 (0.4%) fragment of concrete/mortar.

Historic materials recovered from the general collection include 68 (67.3%) sherds of bottle glass, 8 (7.9%) metal items, 7 (6.9%) sherds of flat window glass, 6 (5.9%) sherds of plain whiteware, 3 (3.0%) plastic 12 gauge shotgun shell casings, 2 (2.0%) sherds of porcelain (one with a blue transfer print), 2 (2.0%) fragments of brick, 2 (2.0%) carbon flashlight battery posts, 1 (1.0%) sherd of earthenware, 1 (1.0%) sherd of opal glass canning jar lid and 1 (1.0%) AC brand automotive sparkplug insulator.

The clear bottle glass is composed primarily of soft drink bottle and canning jar fragments, while the green bottle glass appears to be composed entirely of Coca Cola bottle fragments. The amber bottle glass appears to be beer bottle fragments. The metal is composed almost entirely of wire nails.

One fragment of mussel shell was also recovered from the general surface collection but cannot be assigned to a cultural period.

Data Recovered from the 1 m x 1 m Test Units

Stratigraphy and Content Test Unit 1

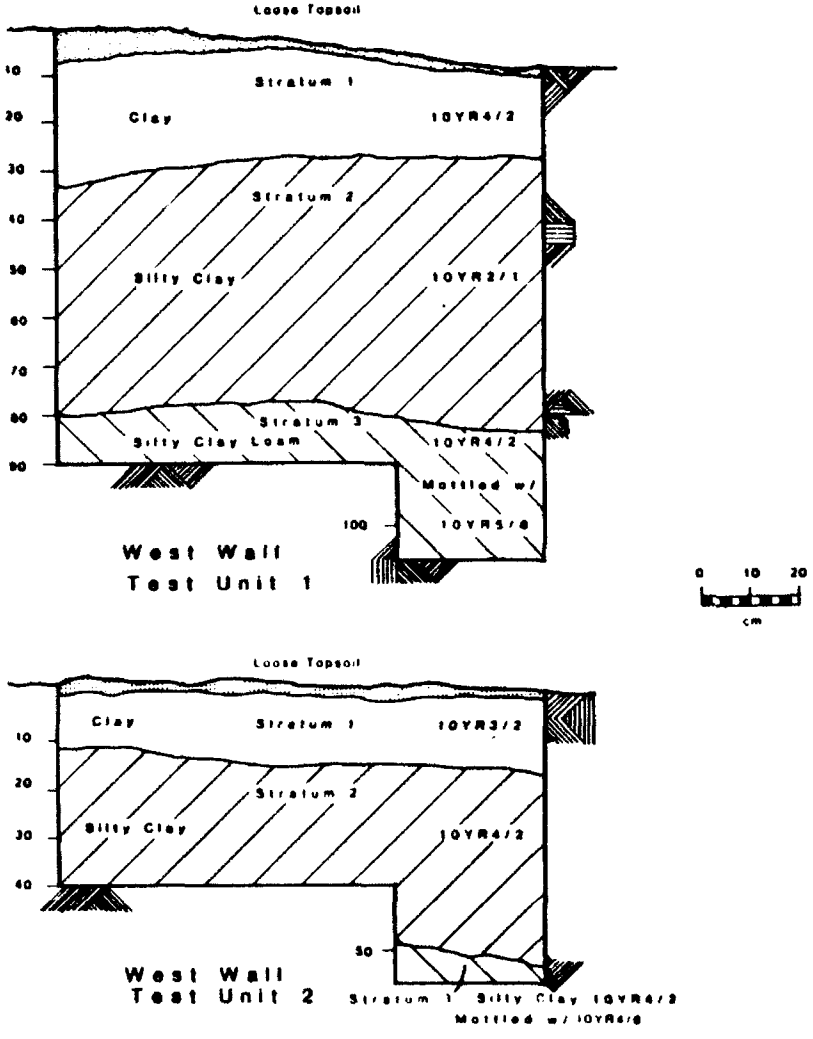
Test unit 1 (Figure 10, Table 8) was the most productive unit excavated at the site. Three strata were identified. Stratum 1 was composed of a compact, dark grayish brown (10YR4/2) clay that extended to depths ranging from 18 cm to 25 cm below the unit datum (northwest corner). This stratum included levels 1, 2 and a portion of level 3. Historic artifacts comprised 33.7% of the 95 items recovered from levels 1 and 2 and it seems likely that the metal item found in level 3 also came from stratum 1.

Stratum 2 was composed of a very dark gray (10YR3/1) clay that reached depths ranging from 64 cm to 74 cm below the unit datum. This stratum included part of level 3, all of levels 4 through 6, most of level 7 and a small part of level 8. Assuming that the metal item in level 3 was recovered from stratum 1, all of the cultural materials recovered were prehistoric. The vast majority of artifacts recovered (94.7%) from levels wholly within stratum 2 (levels 4, 5 and 6) is composed of fragments of burned clay. A basin shaped feature (Figure 11) was discovered in the southeast corner of the unit 44 cm below datum and reached a depth of 58 cm. The maximum horizontal dimensions could not be determined because not all of it was exposed in the unit. It was detectable as a black stain containing particles of burned clay and flecks of charcoal. The fill from this feature was finescreened in the HPA laboratory and contained 3 retouch flakes, 231 particles of burned clay, 0.6 grams of bone and shell fragments, 10 charred nut hulls and 3 pieces of tree bark. These materials have been included with level 5 in Table 8. Only one potential cultural diagnostic, a fragment of a baked clay ball, was recovered from level 4 in stratum 2. The cultural deposits appear to terminate at about the boundary between levels 5 and 6. A dramatic decrease in artifact density occurred below level 5 and level 7 yielded no cultural materials.

Stratum 3 was composed of a dark grayish brown (10YR4/2) silty clay with yellowish brown (10YR5/8) mottling. This stratum includes the bulk of level 8 and all of levels 9 and 10. A lone interior flake was recovered from level 8 but may be out of place since the soil shrinks and develops cracks during dry periods, thereby allowing downward movement of artifacts. Otherwise stratum 3 yielded no evidence of cultural activity.

Stratigraphy and Content of Test Unit 2

Test unit 2 (Figure 10, Table 9) was the least productive unit at the site. Again, three strata were identified. Stratum 1, the plowzone, was composed of a very blocky, very dark grayish brown (10YR3/2) clay containing inclusions of charcoal. This stratum reached depths of 11 cm to 17 cm below the unit datum (northwest corner) and included all of level 1 and part of level 2. Eighty-six percent of the cultural materials recovered from test unit 2 came from level 1 and was composed almost entirely of historic artifacts. Four particles of burned clay were the only items that could conceivably have been

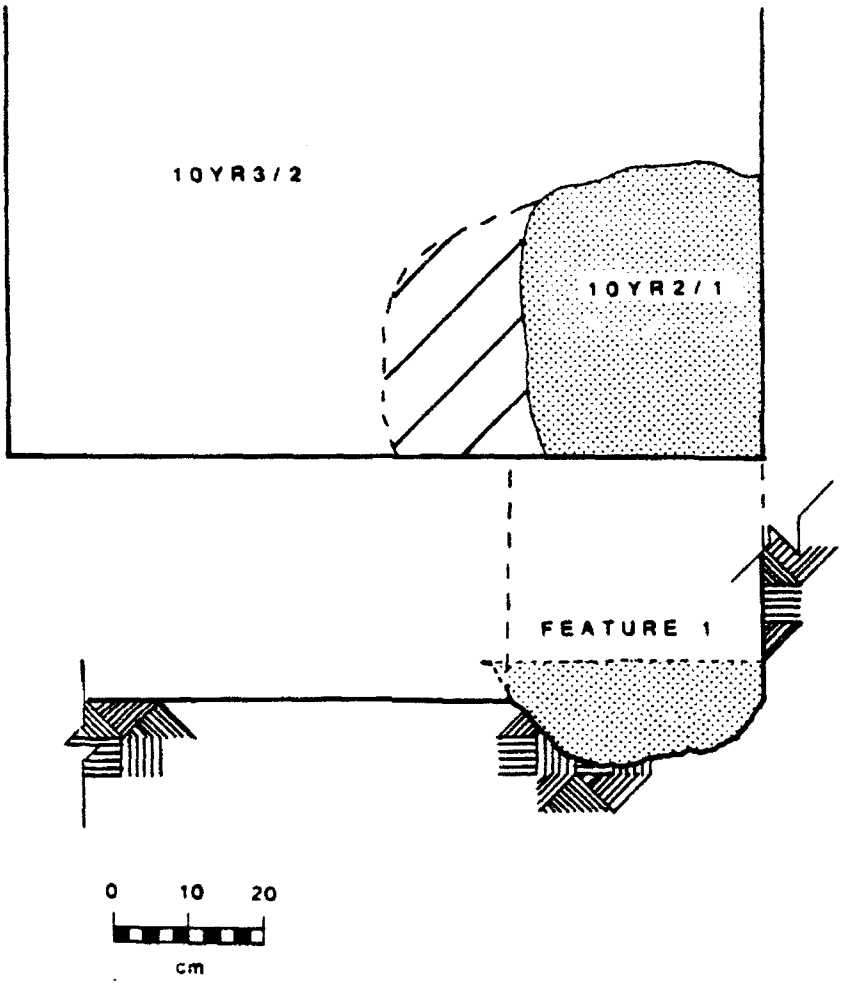


3CT220 PROFILES

SCALE: As Shown	Contract No. DACW66-85-M-1340	DRAWN BY
DATE: 31 Jan 86		REVISED

Profile drawings of 1 m x 1 m test units at 3CT220

Figure 10



FEATURE 1

SCALE: As Shown	Contract No. DACW66-85-M-1340	DRAWN BY
DATE: 31 Jan 86		REVISED

Planview and profile drawing of Feature 1 at 3CT220

Figure 11

Table 5
Piece plotted prehistoric surface material at 3CT220

Provenience	Core		Pri Decort Flake		Sec Decort Flake		Interior Flake		Retouch Flake		Broken Flake		Shatter		Dart Point		Baytown Plain		Mulberry Ck Cordmarked		Grog-Temp. Incised		Baytown Paste		Sand-Temp. UNID		Burned Clay		TOTAL	
	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)
E001.52/N03.48							1	1.5									2	6.5											3	8.0
E001.83/N01.71																	1	2.0											1	2.0
E002.06/N07.73													1	0.7			1	2.1											2	2.8
E002.11/N01.34																	1	2.1											1	2.1
E002.76/N05.33																			1	3.1									1	3.1
E005.00/N04.15																			1	2.3									1	2.3
E008.73/N07.49																	1	2.1											1	2.1
E009.28/N05.90																	1	2.1											1	2.1
E011.17/N08.44																	1	1.1											1	1.1
E011.70/N02.65																											1	2.4	1	2.4
E014.07/N09.54																			1	8.0									1	8.0
E014.88/N01.91																	1	1.9											1	1.9
E017.18/N08.11																	1	3.3									1	5.2	2	8.5
E017.96/S04.45																	1	1.5									1	4.0	2	5.5
E018.80/N12.36																	1	2.6	1	4.2									2	6.8
E018.97/N13.00																	1	2.0											1	2.0
E020.30/N02.82																	1	2.1											1	2.1
E021.47/N04.82											1	1.8																	1	1.8
E022.37/N33.16																	1	1.1											1	1.1
E022.70/N10.47																											1	27.9	1	27.9
E023.59/N27.85																	1	1.4											1	1.4
E023.63/N04.20	1	38.3																											1	38.3
E023.92/N01.89																	1	3.1											1	3.1
E023.99/N00.52																	1	2.9											1	2.9
W000.15/N09.50																	1	3.4											1	3.4
W000.88/N07.95																			1	3.2									1	3.2
W001.58/N10.38																	1	4.9											1	4.9
W001.73/N14.90							1	13.3																					1	13.3
W002.49/N08.13																			1	6.9									1	6.9
W002.62/N08.09	1	26.5																											1	26.5
W002.65/N13.75																	1	2.2											1	2.2
W003.21/N03.51																	1	2.9											1	2.9
W003.30/N10.49																	2	4.2											2	4.2
W004.77/N03.64																	1	12.4	3	10.9							1	4.6	5	27.9
W005.26/N01.61																	1	4.7											1	4.7
W005.34/N04.52																	2	6.2	1	7.2					1	1.4			4	14.8
W005.82/N03.88																			1	4.0			1	1.6			1	1.6	3	7.2
W006.79/N07.34																	1	5.5											1	5.5
W007.12/N03.64																	1	4.8	2	8.7									3	13.5
W007.21/N13.72																	1	1.6											1	1.6
W007.45/N02.91																					1	3.3							1	3.3

Table 5
Piece plotted prehistoric surface material at 3CT220

Provenience	Core		Pri Decort Flake		Sec Decort Flake		Interior Flake		Retouch Flake		Broken Flake		Shatter		Dart Point		Baytown Plain		Mulberry Ck Cordmarked		Grog-Temp. Incised		Baytown Paste		Sand-Temp. UNID		Burned Clay		TOTAL	
	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)
W007.50/N00.04																	1	2.7											1	2.7
W008.39/N01.34																											1	5.6	1	5.6
W008.43/S01.10																											3	10.8	3	10.8
W008.70/N02.30																			1	3.9									1	3.9
W009.81/N13.27																	1	2.5											1	2.5
W010.04/N29.86															1	11.4													1	11.4
W010.09/N08.97																											1	9.4	1	9.4
W013.56/N06.41																			1	7.2									1	7.2
W015.64/N06.67																											2	10.6	2	10.6
W021.66/N03.83																											1	13.9	1	13.9
W023.21/N12.78													1	6.8															1	6.8
W031.42/N06.06																			1	10.1									1	10.1
W032.39/S02.62											1	0.5																	1	0.5
W032.92/N02.32					1	7.3							1	6.3			3	5.1	1	2.3									6	21.0
W033.96/N17.05																	1	2.1									1	2.1	2	4.2
W047.94/N07.34							1	1.1																					1	1.1
W053.42/N02.85																	2	5.7											2	5.7
W057.70/N05.89							2	1.1																					2	1.1
W058.45/N02.42																	2	10.5											2	10.5
W060.55/N13.35																	4	6.1									1	0.9	5	7.0
W063.00/S00.73																	1	1.8											1	1.8
W072.53/N19.09							1	3.9																					1	3.9
W073.43/S03.27																	3	7.0											3	7.0
W073.75/N06.08									1	0.5			1	1.0			2	4.8											4	6.3
W074.17/N20.68													1	9.1															1	9.1
W074.99/N00.85																	1	7.1											1	7.1
W075.91/N03.65					1	1.9											2	2.3											3	4.2
W076.31/N05.34																			1	2.4			1	1.1					2	3.5
W079.28/S05.89																	1	4.4											1	4.4
W079.90/N18.45							1	1.9																					1	1.9
W080.50/S00.30							1	2.6									1	2.0											2	4.6
W081.85/S04.96							1	2.3																					1	2.3
W082.96/S09.50																	1	1.6											1	1.6
W082.99/S00.97							1	1.6									1	5.1									1	0.8	3	7.5
W083.22/N27.01									1	1.6																			1	1.6
W083.59/N08.32													1	1.6			1	0.9					1	1.4					3	3.9
W085.58/N15.65							1	1.3																					1	1.3
W086.18/N11.93																	1	2.1											1	2.1
W086.28/N11.13									1	0.1																			1	0.1
W086.32/N10.85							1	1.2																					1	1.2
W086.76/N11.32					1	3.1																							1	3.1

Table 5
Piece plotted prehistoric surface material at 3CT220

Provenience	Core		Pri Decort Flake		Sec Decort Flake		Interior Flake		Retouch Flake		Broken Flake		Shatter		Dart Point		Baytown Plain		Mulberry Ck Cordmarked		Grog-Temp. Incised		Baytown Paste		Sand-Temp. UNID		Burned Clay		TOTAL	
	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)	Ct.	Wt.(g)
W087.26/N11.36											1	0.1															1	0.1
W092.77/N06.49													1	9.5													1	9.5
W094.55/N09.19									1	1.2																	1	1.2
W095.31/N15.10							1	2.1																			1	2.1
W097.85/N05.41							1	1.2																			1	1.2
W098.90/N14.81																	1	1.9									1	1.9
W100.97/N02.58																	1	2.2									1	2.2
W101.57/N22.36													1	2.2													1	2.2
W102.61/N16.93																	1	2.5									1	2.5
W102.94/S03.47							1	0.7			1	0.5					1	2.6									3	3.8
W103.74/N07.41	1	4.6																									1	4.6
W105.27/N12.43													1	3.8													1	3.8
W105.62/N08.96									2	0.9																	2	0.9
W107.70/N08.10									2	0.9																	2	0.9
W107.92/N04.21																	1	2.0									1	2.0
W107.94/N03.61																	1	1.1									1	1.1
W112.75/N16.82			1	5.5	1	1.3	1	2.7																			3	9.5
W116.98/S02.21																	1	1.8									1	1.8
W117.78/N16.97					1	1.2																					1	1.2
W127.98/N02.38									1	0.3																	1	0.3
W160.80/N07.91									1	1.0																	1	1.0
TOTAL	3	69.4	1	5.5	5	14.8	16	38.5	10	6.5	4	2.9	9	41.0	1	11.4	67	180.6	18	84.4	1	3.3	3	4.1	1	1.4	18	103.0	157	566.8

Table 6
Systematic surface collection of historic artifacts at 3CT220

Artifact Type	E5S		E15S		E25S		E30S		E35S		E10N		E20N		W5S		W15S		W25S		W35S		W45S		W65S	
	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)
Bottle Glass - Clear	16	24.2	4	12.3	1	4.3	3	15.1	1	3.8	7	15.9	3	11.9	28	91.7	24	80.2	5	4.3			1	4.1	3	49.0
Bottle Glass - Blue											1	6.5			1	0.2										
Bottle Glass - Purpled	2	3.6																								
Bottle Glass - Green	3	4.1	3	5.4											3	6.8	2	4.6	2	4.3						
Bottle Glass - Amber	1	2.0	1	2.6							3	7.3			2	4.7	4	38.6					1	1.1		
Whiteware - Plain			2	1.8							1	0.9			1	1.7	8	14.9	1	3.2						
Milk Glass																	2	1.5								
Earthenware															1	8.0	1	13.9			1	5.6				
Window Glass - Clear					3	4.6									9	9.5	6	6.1	2	0.9						
Porcelain	1	1.6													1	0.5										
Brick	3	50.7	1	30.3	3	15.1					1	15.6					1	3.6								
Metal	2	37.0	2	7.7	1	6.7									4	17.4										
Opal Glass															1	1.1			1	0.5						
Bakelite															1	0.5										
Concrete																	1	152.6								
TOTAL	28	123.2	13	60.1	8	30.7	3	15.1	1	3.8	13	46.2	3	11.9	52	142.1	49	316.0	11	13.2	1	5.6	2	5.2	3	49.0

Artifact Type	W75S		W105S		W135S		W10N		W20N		W30N		W40N		W60N		W80N		W90N		W110N		W120N		TOTAL	
	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)
Bottle Glass - Clear			6	29.4			3	8.9	2	5.2	3	8.1			2	1.8			2	2.3	2	4.2	3	15.3	119	392.0
Bottle Glass - Blue							2	2.4																	4	9.1
Bottle Glass - Purpled																									2	3.6
Bottle Glass - Green			1	2.8	1	0.8																			15	28.8
Bottle Glass - Amber							2	4.3																	14	60.6
Whiteware - Plain	1	1.0			1	2.9	1	2.8	1	3.1									1	1.3					18	33.6
Milk Glass																									2	1.5
Earthenware											1	4.9					1	9.0							5	41.4
Window Glass - Clear							4	4.1																	24	25.2
Porcelain							1	2.4																	3	4.5
Brick			1	10.7									1	245.2							1	5.6			12	376.8
Metal																									9	68.8
Opal Glass																									2	1.6
Bakelite							1	0.6																	2	1.1
Concrete																									1	152.6
TOTAL	1	1.0	8	42.9	2	3.7	14	25.5	3	8.3	4	13.0	1	245.2	2	1.8	1	9.0	3	3.6	3	9.8	3	15.3	232	1201.2

Table 7
General surface material at 3CT220

Artifact Type	Ct.	Wt(g)
Primary Decort. Flake	1	4.6
Interior Flake	2	4.2
Retouch Flake	1	1.2
Baytown Plain	33	101.7
Mulberry Creek Cord-marked	34	112.6
Baytown Paste *	43	54.0
Baytown Paste Incised **	2	3.5
Sand/Grog-Tempered	1	2.6
Burned Clay	23	60.7
Mussel Shell	1	5.4
Bottle Glass - Clear	50	163.4
Bottle Glass - Blue	1	0.6
Bottle Glass - Purpled	5	7.8
Bottle Glass - Green	8	19.4
Bottle Glass - Amber	4	6.8
Plain Whiteware	6	9.0
Earthenware	1	66.9
Clear Window Glass	7	8.3
Porcelain ***	2	8.0
Brick	2	21.3
Metal	8	121.7
Opal Glass	1	0.6
12 Ga. Shotgun Shell	3	16.4
Carbon Flashlight Battery Post	2	5.4
Automotive Sparkplug Insulator	1	16.5
TOTAL	242	822.6

* Includes an unidentified decorated rim sherd
** Includes a notched rim sherd
*** Includes a sherd with blue transfer print

prehistoric in origin. It is possible that the 6 items recovered from level 2 also came from stratum 1.

Stratum 2 was composed of a dark grayish brown (10YR4/2) silty clay with dark yellowish brown (10YR4/6) mottling. This stratum reached depths ranging from 52 cm to 56 cm and included part of level 2, all of levels 3 through 5 and part of level 6. This stratum was largely devoid of cultural material, with the possible exception of level 2.

Stratum 3 was also composed of a dark grayish brown (10YR4/2) silty clay but was more moist than stratum 2 and exhibited less of the dark yellowish brown (10YR4/6) mottling. This stratum was encountered in the lower portion of level 6 and yielded no cultural material.

Table 8
Artifacts recovered from test unit 1 at 3CT220

Artifact Type	0-10 cm		10-20 cm		20-30 cm		30-40 cm		40-50 cm		50-60 cm		70-80 cm		TOTAL	
	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)
Sec. Decort. Flake									1	2.8					1	2.8
Interior Flake					1	1.0							1	1.7	2	2.7
Retouch Flake									3	0.0					3	0.0
Shatter			1	0.5											1	0.5
Biface	2	38.3													2	38.3
Fire-Cracked Rock											1	0.9			1	0.9
Pebble (granite?)							1	6.5							1	6.5
Baytown Plain	7	8.7													7	8.7
Mulberry Creek CM	2	3.6													2	3.6
Baytown Paste	14	7.3	10	5.4											24	12.7
Burned Clay	15	7.3	11	6.9	63	30.7	83	37.6	292	120.7	3	0.9			467	204.1
Clay Ball Fragment							1	3.8							1	3.8
Bone/Shell	1	0.1							-	0.6	1	0.0			2	0.7
Vegetal Matter									13	0.6					13	0.6
Bottle Glass-Clear	13	25.5													13	25.5
Bottle Glass-Green	2	2.7													2	2.7
Bottle Glass-Amber	4	8.6													4	8.6
Plain Whiteware			1	0.5											1	0.5
Brick	2	21.4	3	1.4											5	22.8
Metal	5	20.8	1	2.5	1	0.3									7	23.6
Shell Casing	1	1.1													1	1.1
TOTAL	68	145.4	27	17.2	65	32.0	85	47.9	309	124.7	5	1.8	1	1.7	560	370.7

Table 9
Artifacts recovered from test unit 2 at 3CT220

Artifact Type	0 - 10 cm		10 - 20 cm		TOTAL	
	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)
Burned Clay	4	1.2			4	1.2
Bottle Glass - Clear	11	9.3			11	9.3
Bottle Glass - Blue	2	0.2			2	0.2
Bottle Glass - Purpled	1	0.5			1	0.5
Bottle Glass - Green	3	7.7			3	7.7
Bottle Glass - Amber	1	0.5			1	0.5
Plain Whiteware	1	0.2			1	0.2
Brick	1	0.3	1	2.5	2	2.8
Metal	8	12.3	2	1.1	10	13.4
Shell Casing (.22 cal)	1	0.2			1	0.2
Aluminum Eyelet	1	0.2			1	0.2
Plastic Lid	1	1.8			1	1.8
Charred/Melted Material	3	5.0	3	1.4	6	6.4
TOTAL	38	39.4	6	5.0	44	44.4

Stratigraphy and Content of Test Unit 3

Test unit 3 (Figure 10, tables 10 and 11) also yielded a fairly large number of cultural items, although less than one third of that for test unit 1. The primary distinguishing feature between these two units is a greater variety of materials and a much smaller proportion of burned clay in test unit 3. Four strata were detected in test unit 3. Stratum 1 was composed of a dark brown to very dark grayish brown (10YR3/3 to 10YR3/2) clay and included level 1, most of level 2 and part of level 3. The number of prehistoric artifacts increased slightly with 21 items in level 1, 23 in level 2 and 27 in level 3, while the historic materials decreased from 37 in level 1 to 18 in level 2 and 2 in level 3. It seems likely that the historic materials are associated with stratum 1 since their frequency and relative proportion decreased as the proportion that stratum 1 comprises of each level declined. Whether the prehistoric materials were primarily associated with stratum 1 or with stratum 2 is difficult to determine since they increased steadily until level 4 in stratum 2 where they nearly disappeared altogether.

Stratum 2 was composed of a very dark gray (10YR3/1) clay and included part of level 2, most of level 3, all of levels 4 and 5, most of level 6 and part of level 7. Historic materials were recovered from levels 4 and 6, but these could easily be accounted for as evidence of the downward movement of artifacts through desiccation cracks over the years. No evidence of disturbance was observed while in the field, so it is not likely that these materials represent actual physical intrusions into the lower levels by the historic occupants. Levels 4 and 5 yielded few cultural items relative to those in stratum 2 and to level 6. In addition to a sudden increase in artifact density, level 6 yielded 5 Tchefuncte Plain sherds. Although the artifact density dropped in level 7, this may be more apparent than real since stratum 2 comprised only part of this level.

Stratum 3 was composed of a dark grayish brown clay and included part of level 7, all of levels 8 and 9 and a small part of level 10. No cultural materials were recovered from the excavation but a small amount of burned clay and organic matter was recovered from the finescreen samples. Whether these materials represent primary or secondary deposition is not known.

Stratum 4 was composed of a very moist, elastic, very dark grayish brown clay and included most of level 10 and all of level 11. No cultural materials were recovered.

NATURE AND EXTENT OF THE SITES TESTED

The HPA investigations were of sufficient scope and intensity to enable conclusions to be made regarding the questions listed on page 5. While these questions do not themselves constitute "research" in the strictest sense, they provide information regarding the research potential of a site and, therefore, help identify whether it is eligible for nomination to the National Register of Historic Places.

Table 10
Artifacts recovered from test unit 3 at 3CT220

Artifact Type	0-10 cm		10-20 cm		20-30 cm		30-40 cm		40-50 cm		50-60 cm		60-70 cm		TOTAL	
	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)
Interior Flake	2	3.4													2	3.4
Retouch Flake			1	0.1											1	0.1
Shatter	2	1.9													2	1.9
Fire-Cracked Rock	1	1.3													1	1.3
Baytown Plain			8	34.4			1	9.3					7	16.3	16	60.0
Mulberry Creek CM	1	1.6	3	12.0							3	20.2	7	33.8		
Tchefuncte Plain?											4	8.2			4	8.2
Baytown Paste	1	1.0			8	6.2			6	4.0	10	16.9			25	28.1
Sand-Tempered Pl.											1	0.6			1	0.6
Burned Clay	15	21.6	9	7.6	8	17.1	2	0.7	6	4.5	10	8.9	5	3.1	55	63.5
Bone/Shell					1	0.6					1	0.1	-	1.5	2	2.2
Bottle Glass-Clear	12	31.3	13	20.3	2	1.9					2	0.2			29	53.7
Bottle Glass-Green	2	3.3	1	0.9											3	4.2
Bottle Glass-Amber	2	2.2	1	0.4											3	2.6
Plain Whiteware	1	1.1													1	1.1
Earthenware	3	15.5	1	8.0											4	23.5
Porcelain	1	2.0													1	2.0
Brick	3	13.7					1	1.2			1	0.1			5	15.0
Metal	10	37.0	2	3.6							2	8.9			14	49.5
Carbon Battery Post	1	2.0													1	2.0
Concrete/Mortar	1	53.5													1	53.5
Opal Glass	1	1.5													1	1.5
TOTAL	58	192.3	37	76.9	22	37.8	4	11.2	12	8.5	31	43.9	15	41.1	179	411.7

Table 11
Artifacts recovered from test unit 3 finescreen samples at 3CT220

Artifact Type	10-20 cm		20-30 cm		30-40 cm		40-50 cm		50-60 cm		60-70 cm		70-80 cm		80-90 cm		TOTAL	
	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)	Ct.	Wt(g)
Interior Flake	1	0.4															1	0.4
Baytown Plain	1	2.7	2	4.9													3	7.6
Tchefuncte Plain?									1	4.8							1	4.8
Baytown Paste					4	4.4	2	0.9	9	3.2							15	8.5
Burned Clay	2	0.2	5	3.1			4	1.0	1	0.3	1	0.1	1	0.1	1	0.1	15	4.9
Bone/Shell													2	0.1	1	0.1	3	0.2
Vegetal Matter													2	0.1			2	0.1
TOTAL	4	3.3	7	8.0	4	4.4	6	1.9	11	8.3	1	0.1	5	0.3	2	0.2	40	26.5

3CT219

Integrity of the Deposits

The integrity of the deposits at 3CT219 is not good. Testing conducted by both HPA and IRI shows that the deposits are almost entirely restricted to the plowzone, which has been continually disturbed by agricultural activities. No evidence of preserved features or other potentially in situ cultural deposits has been recovered. This, in combination with the generally low artifact density, severely limits the research potential of the site.

Cultural-Historical Periods Represented

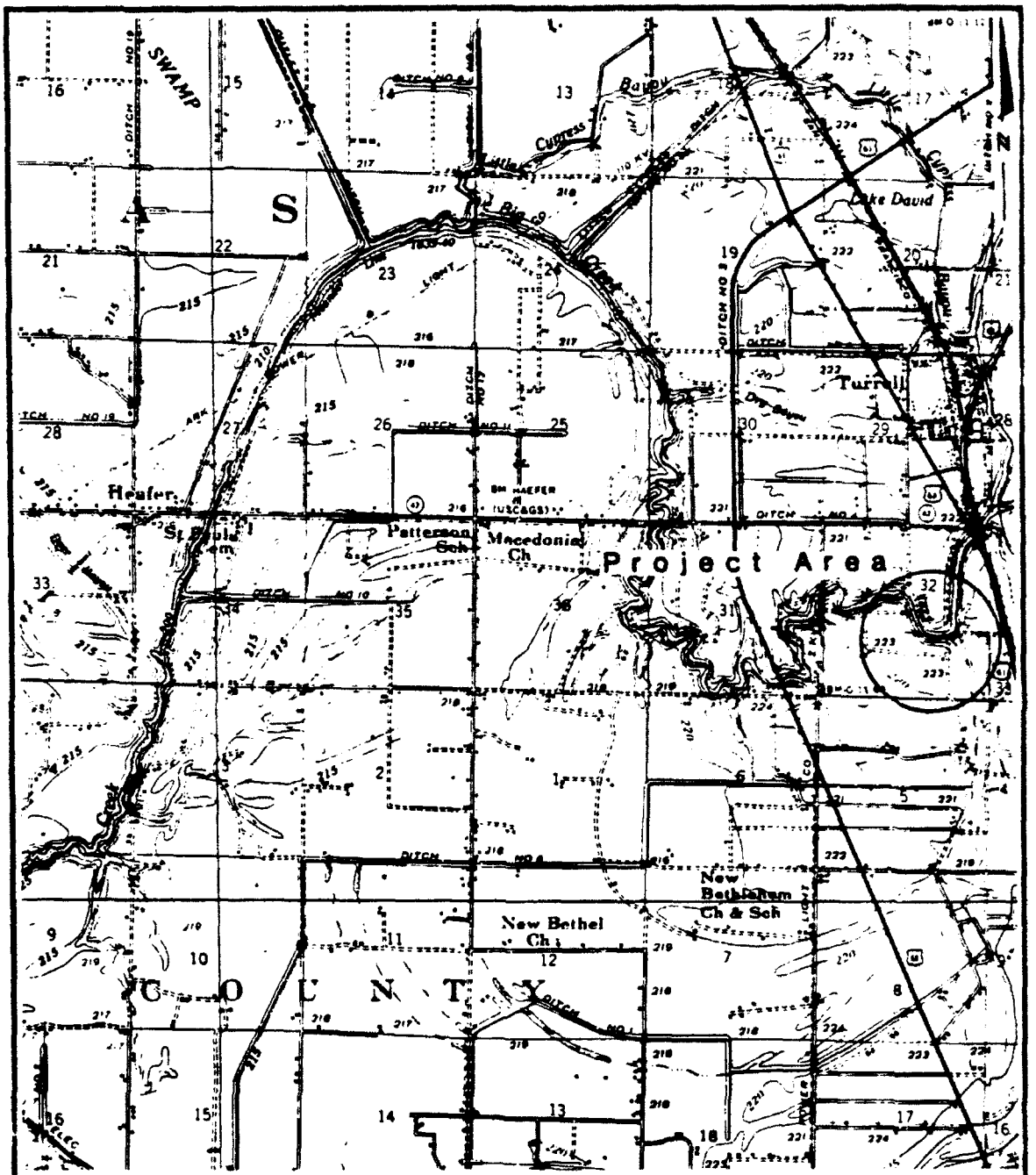
IRI assigned 3CT219 to the Woodland Period, based on the recovery of Baytown Plain and Mulberry Creek Cord Marked ceramics. An historic component was not discussed despite the presence of historic artifacts, because of a lack of evidence for a former structure, both on the ground and on the USGS quadrangles.

Artifacts recovered during the HPA investigations lend support to the IRI assessment but do not enable assignment to a more specific time period. A 20th century historic component should also be assigned because of the presence of historic artifacts, but we admit that IRI's position certainly has merit in light of the lack of evidence for an actual historic occupation of the site. These materials may be related to a structure shown on the 1957 Deckerville 15' quadrangle that is located a short distance to the east of 3CT219 (Figure 12).

Horizontal and Vertical Extent

The HPA investigations indicate that 3CT219 occupies only about 250 m^2 and is considerably smaller than the 4,900 m^2 suggested by IRI. The primary reason for this seems to be the much smaller amount of cultural material present on the surface of the site during the HPA testing. This is probably a result of the artifacts removed by IRI and better ground surface visibility during their visit. The site plot included with the IRI site form shows the site to be roughly 85 m E/W x 50 m N/S, for an area (4,250 m^2) slightly smaller than the 4,900 m^2 estimate given in their report. The surface collection data presented by IRI indicates that the north-south dimension is actually closer to 40 m, yielding a site size of 3,400 m^2. Based on the available evidence, this would seem to be a more reasonable estimate. In either case, the site would be situated entirely within the project right-of-way since a thorough search of the area surrounding the site failed to detect additional surface materials.

The single test unit excavated by IRI failed to detect any cultural stratigraphy and showed the cultural materials to be restricted to the first 10 cm level. The three test units excavated by HPA produced similar results. No discernible stratigraphy or intact cultural deposits were encountered and the cultural materials recovered were restricted to the first 10 cm level.



AREA IN 1957

SCALE: 1:62,500	Contract No. DACW66-85-M-1340	DRAWN BY
DATE: 31 Jan 86		REVISED

Location of historic structures in the 3CT219/3CT220 vicinity

USGS Deckerville 15' quadrangle 1957 — Figure 12

Site Function

A functional assessment of 3CT219 is difficult due to a lack of functional diagnostics. IRI (LeeDecker 1979b:76) classified it as a short term occupation by a small group. While we find nothing in this statement with which to disagree, we also find nothing relating to the kinds of activities that may have been conducted. Unfortunately, little in the way of functional diagnostics have been recovered from the site. IRI found 2 flake tools, a piece of debitage and a cobble tool as well as a number of sherds. The HPA investigations yielded prehistoric ceramics and historic materials but no prehistoric lithics. The identification of flake tools from the surface of an agricultural field is, in our experience, a dubious business at best and the IRI report does not indicate whether these tools were used for cutting, scraping, gouging, etc., rendering them useless as functional diagnostics. The recovery of a cobble tool with battering use wear on one end and a bifacial working edge on the other suggests its use in chopping and/or pulverizing activities. A lack of flaking debris argues against its use in flintknapping. The presence or a chopping/pulverizing tool in association with ceramics suggests that the site may have been a gathering station where materials, possibly plant fiber, nuts or other vegetal matter, were gathered, processed and placed in ceramic containers for transport back to a habitation site. An actual occupation, even for a short period, seems unlikely because the low elevation of the site would have made it an unsuitable place to live for much of the year.

The possibility that the materials present were redeposited during a previous episode of channel excavation must also be considered. A site has not been found on the other side of the creek or in another location sufficiently nearby to have served as a source for the cultural materials found at 3CT219.

3CT220

Integrity of the Deposits

The integrity of the historic component at 3CT220 is not good. Evidence of intact historic features, structural remains (such as foundation footings, privy or cellar depressions), or definable activity areas no longer exists at the site. In addition, the presence of numerous beer cans and tab tops of obviously recent origin in the vicinity of the pump and ammonia tank suggests the possibility that many of the soft drink and beer bottle fragments also post date the historic occupation at the site. Substantial post-occupation contamination of the historic archeological record is obvious. While it could be argued that the recent activity is as much a part of the archeological record as any other, we believe that it is of a nature that cannot be considered significant relative to National Register criteria and one that has seriously compromised the previous historic occupation.

The integrity of the prehistoric component appears to be very good, with the exception of the upper 20 cm to 30 cm which have been damaged by plowing and contaminated by the downward movement of historic artifacts through desiccation cracks formed during dry periods. Clear evidence that the deposits immediately below the plowzone remain intact

was not recovered. An intact feature was discovered at a depth of 44 cm to 58 cm in test unit 1 and, because of the depth at which it was found, it is likely that others exist at the site as well. In addition, stratum 2 in test units 1 and 3 represents an apparent midden deposit that began 10 cm to 30 cm below the surface and extended to depths of roughly 50 cm to 70 cm. At least the lower portion of this deposit appears to be intact.

On the negative side, the preservation of organic remains is poor Efforts to recover vegetal remains by flotation were unsuccessful because of the high clay content of the soil and finescreen recovery failed to produce substantial amounts of organic remains (although some were recovered). It is anticipated that if burials are present they have been poorly preserved.

Within the construction right-of-way, the prehistoric materials are restricted to the plowzone, as documented by the IRI test unit and HPA test unit 2. This part of the site is low-lying and at least some of the materials present have been secondarily deposited as a result of plowing and erosion.

Cultural-Historical Periods Represented

Three periods of occupation are evident from the data recovered from 3CT220. These include 20th century historic, Baytown and Tchula. We hesitate to assign a Marksville Period occupation on the basis of the Manker and Snyders points recovered by IRI because of an absence of diagnostic Marksville Period ceramics.

The historic materials are characterized by plain whiteware, machine made bottles and canning jars, wire nails, modern brick and concrete, modern center fire ammunition cartridges and flat window glass. A post World War II period of occupation seems appropriate, based on the archeological evidence and informant interviews. The presence of 2 sherds of purpled glass suggests the possibility of an earlier occupation but these are so few in number that we tend to discount this as a possibility. Three structures are shown to be located on the site on the 1957 Deckerville 15' quadrangle but are absent on the 1974 Heafer 7.5' map. One (the house) is situated on the highest elevation, in the vicinity of the HPA datum, and the other two are located immediately west of the confluence of the intermittent stream and Big Creek.

The Baytown materials consist primarily of Baytown Plain and Mulberry Creek Cord Marked ceramics. IRI reported recovering 4 Evansville Punctate sherds. One incised body sherd, one notched rim sherd and one rim sherd with incisions placed at an angle to the rim and immediately below it were recovered by HPA but are all too small to classify. The lithics consist mostly of flintknapping debris. The only tools identified were the Gary dart point and 2 biface fragments.

The assignment of the Tchula occupation should be considered tentative at this point since it was defined on the basis of five Tchefuncte Plain sherds recovered from level 6 (50 cm - 60 cm) of test unit 3. The clay ball fragment recovered from level 4 (30 cm - 40 cm) of test unit 1 may also be associated with this occupation. While the Tchefuncte sherds were decidedly different than the Baytown ceramics found at the site, the latter were also recovered with and below the Tchefuncte sherds (levels 6 and 7 of test unit 3) in frequencies

comparable to those encountered in the upper 30 cm. Accidental contamination from the upper levels does not seem likely because of the quantity and size of the sherds.

Horizontal and Vertical Extent

The precise horizontal extent of the historic component was impossible to define because of the widespread nature of historic materials. During surface collection it became clear that isolated historic artifacts could be found virtually everywhere in the vicinity. Indeed, the Deckerville quadrangle shows that at least two other historic sites are located sufficiently close to 3CT220 that one would expect surface artifacts to be fairly extensive, with the locations of former houses and activity areas marked by increased artifact density. In addition, the recent discard of soft drink and beer bottles posed a significant problem in defining the boundaries of a historic component that was also recent. It was necessary, therefore, to arbitrarily select a cutoff point for the collection of historic materials. Nevertheless, the location of the actual historic occupation was clearly defined by a high frequency of artifacts in collection units E5S, E15S, E25S, E10N, W5S, W15S, W25S and W10N (Table 6). The remaining collection units yielded only one to three items each. The outline of the collection units listed above corresponds nicely with the plot of the structures shown of the Deckerville quadrangle and encompasses an area about 70 m N/S x 35 m E/W or ca 2,450 m^2, of which roughly one third to half is within the right-of-way. According to the son of the former landowner, the house was located on the highest ground outside the project (LeeDecker 1979b:77). The depth of the historic component appears to be slightly greater than 20 cm, although artifacts have filtered down as deeply as 60 cm.

The surface plotted prehistoric artifacts (Figure 5) indicate that the Baytown component occupies an area about 160 m E/W x 25 m N/S or ca 4,000 m^2. Isolated artifacts located at 7.91N/160.8W, 33.16N/22.37E and 27.85N/23.59E were not included in estimating site boundaries. Approximately the west half of the Baytown component is situated within the project. This portion of the site was tested by IRI and found to be only 8 cm deep. This is not surprising since it is located at a low elevation next to Big Creek. HPA test units 1 and 3 were located on the highest part of the site and revealed deposits that extend to a depth of 60 cm to 70 cm. The exact depth of the Baytown component is open to question because of the seeming contradictory results obtained from the two test units. Test unit 1 yielded Baytown ceramics to a depth of only 20 cm. In test unit 3 Baytown ceramics apparently ended with level 3 (30 cm) only to reappear in levels 5, 6 and 7. The frequency and large size of the deeper materials argues against secondary deposition. While it is possible that the dark soil characteristic of stratum 2 may have masked Baytown features intruding into the deeper levels, this is unlikely and fails to explain why no Baytown materials were recovered from level 4.

The Tchula component appears to be buried since no evidence of it was recovered from the surface of the site or from the upper levels of the test units. Its horizontal extent remains unknown. It appears to be situated between 30 cm and 60 cm below the surface, but we reiterate that evidence its existence is scant at this point. The depth at which

Feature 1 was recorded (44 cm - 58 cm) is consistent with its assignment to the Tchula occupation. However, culturally diagnostic artifacts were not recovered from it and it remains possible that it is associated with the Baytown occupation because the soil in stratum 2 is extremely dark and could have prevented the detection of Feature 1 in the upper levels.

Site Function

The available evidence demonstrates that the historic component represents a domestic farming operation. The 1957 USGS quadrangle shows 3 structures to be located at the site and the artifacts demonstrate that at least one of them was a house. These materials include canning jar fragments, parts of dishes and building materials. An informant interview conducted during the IRI investigations also confirmed that a house stood on the higher part of the site, outside the right-of-way.

The Baytown component appears to have functioned as a habitation that was probably occupied on a seasonal basis because of annual flooding. The presence of a fairly large amount of pottery, midden accumulation and possible wattle and daub structures argue for habitation of the site for extended periods. The Tchula occupation was probably of a similar nature but insufficient data were recovered to enable firm statements to be made.

SIGNIFICANCE, IMPACTS AND RECOMMENDATIONS

The intensity of the field investigations conducted at 3CT219 and 3CT220 was sufficient to determine if either site contained data that could be considered potentially significant from a local, state or national perspective. Especially important in this assessment are the Northeast Arkansas (Morse 1982), Historic Archeology (Stewart-Abernathy and Watkins 1982) and Operating Plans (Davis 1982a) sections of A State Plan for the Conservation of Archeological Resources in Arkansas (Davis 1982b).

The surface and plowzone artifact scatter at 3CT219 contains no preserved features or other in situ cultural deposits. The artifacts from the disturbed contexts are not of a sufficient number to answer any of the Late Woodland Baytown Study Unit NE9 questions, including those relating to technology, subsistence, settlement systems, social organization, ideology, human biology, ecology or geochronology (Morse 1982:NE8-NE18). Based on the assembled data, we do not consider 3CT19 to be eligible for nomination to the National Register of Historic Places (Davis 1982c:OP16). No further cultural resources work is recommended for this site.

The historic component at 3CT220 is not well preserved. While the 1957 Deckerville 15' quadrangle shows three structures in the immediate vicinity, all had been removed by the time the 1974 Heafer 7.5' quadrangle was published and no evidence of the structures or associated features remains at the site today, save the presence of fragmented building materials. No in situ structural remains, such as foundation footings, privy and cellar depressions, or well, exist at the site. Because these fields are cultivated and cleaned of debris each year (particularly large items that might interfere with cultivation or

damage farming equipment), the only remaining archeological evidence for the historic occupation is the surface scatter of artifacts. The disturbed context of these materials, in combination with an absence of intact historic features or standing structures, leads us to the conclusion that the historic component at 3CT220 does not contain significant data and is not eligible for inclusion on the National Register of Historic Places (Davis 1982c:OP54). No further cultural resources work is recommended for the historic component at 3CT220.

Iroquois Research Institute investigators documented in an informant interview with the then present owner's son that a house once stood at this location. Other than this domestic structure, which is also shown on the 1957 quad, there were no other known building improvements at 3CT220. Remember that this area is situated in an intensively cultivated agricultural field and all but the smallest of artifacts remain which evidence a one time occupation. There are no foundations, pillars or otherwise, and very little other structural evidence (except for a few fragments of brick and motar). Not a single artifact clearly suggests activities or an occupation which predates the 1940s and there is no evidence of an earlier occupation. The house site itself was situated on the highest ground (near and east of the end of the road at the pump shed in Figure 8) south and well outside the proposed right-of-way. Artifacts collected from the 11 transects situated within the right of way (N=50) represent less than 22% of the historic assemblage (see totals for transects W120, 110, 90, 80, 60, 40, 30, 20 and 10N and E10 and 20N in Table 6). This part of the right-of-way is low in elevation and remains that way for several meters south of the right of way line until the pump shed area is reached. There is no reason to believe that historic activities associated with this structure that would have resulted in significant deposits took place in the low areas within the right-of-way. No evidence of historic activities other than a few plow-moved artifacts has ever been discovered within the right-of-way. This includes the investigations by both IRI and HPA. In our opinion these out-of-context artifacts did not and do not deserve further attention. Even if it were possible to argue that the true historic component located outside the right-of-way is significant, it is outside the right-of-way and no significant aspect of it will be impacted by the proposed activities.

With the exception of the upper 20 cm to 30 cm, which have been adversely impacted by continued cultivation and the downward movement of historic artifacts, our investigations documented a generally well preserved prehistoric component at 3CT220. At least two periods of occupation during prehistoric times are represented by the assembled data. The first of these was during the Tchula Period (Study Unit NE7) with associated Tchefuncte Plain pottery and a fragment of a clay ball or Poverty Point Object (Morse 1982:NE21). Although no undeniable evidence was recovered that Feature 1 is directly associated with this occupation, the depth at which it was encountered suggests that it probably is. Moreover, the recognition of the Tchula assemblage itself renders the component potentially significant and therefore potentially eligible for the National Register of Historic Places (Morse 1982:NE10, Technology Question 26 relating to the "typical Tchula ceramic assemblage;" Davis 1982c:OP14).

The second prehistoric occupation of 3CT220 was during the Baytown Period (Study Unit NE9) with both Baytown Plain and Mulberry Creek Cord

Marked pottery, and an associated midden. Based upon results obtained at similar sites along Big Creek (3CT50, 3CT98, 3CT215), the presence of midden associated with the Baytown component suggests that intact features are probably present and renders its data significant in light of various research questions relating to technology, subsistence, settlement systems and possibly social organization and therefore potentially eligible for the National Register of Historic Places (Morse 1982:NE21; Davis 1982c:OP16). We must also keep in mind that since Feature 1 yielded no culturally diagnostic artifacts it could be associated with the Baytown component. It is possible that it simply went undetected because its presence was masked by the extremely dark color of the surrounding matrix.

Although both the Tchula and Baytown components at 3CT220 appear to be eligible for inclusion on the National Register, the construction activities as currently designed will not effect significant characteristics of the site. Subsurface investigations by both IRI and HPA found that the deposits within the right-of-way are restricted to the plowzone and are badly disturbed. Preserved portions of each component are associated only with the higher elevations south of the proposed right-of-way. IRI investigators excavated a 1 m x 1 m unit at their grid coordinate 30S/1E. The map included on their CR10 form is just a field sketch but it does show the location of the test unit in relation to their site datum at Sta. 979+00. The location of the right of way on the CR10 map is about 25 m to 30 m too far south. Although we cannot identify the precise location of the IRI unit, we can say that it is located between our 105S and 75S lines and either just north (inside), on or just south (outside) of the proposed right-of-way. The IRI work found four artifacts (3 Baytown Plain sherds and a fragment of glass) in the upper 7 cm. The rest of the unit to 30 cm was culturally sterile. It is because of the results of the IRI test next to the right-of-way, the results of our test unit 2 inside the right-of-way and because the topographic situation of the right of way (low) in relation to the ridge to the south of it that no further investigations are considered necessary in the proposed construction area. If the proposed work is strictly limited to the areas within the direct impact zone, as shown in Figure 2, there will be no effect to significant data preserved at 3CT220.

We recommend that the District order its construction contractor keep off all areas south of the right-of-way between Stations 974+50 and 984+10 to help assure no effect to the significant archeological deposits at 3CT220. It is recommended, however, that should undisturbed deposits be discovered during the course of the construction activities that both the Memphis District of the U.S. Army Corps of Engineers and the Arkansas State Historic Preservation Program be contacted immediately.

REFERENCES CITED

Arkansas Department of Planning
1974 Arkansas Natural Area Plan. Little Rock.

Cande, Robert F.
1980 An archeological survey of the proposed City of West Memphis Municipal Airport improvements, Crittenden County, Arkansas. Unpublished manuscript on file with the Federal Aviation Administration, Bethany, Oklahoma and the Arkansas Archeological Survey, Fayetteville.

Cochran, Roy J., Jr.
1978 Location and survey conditions in the St. Francis II project areas. In St. Francis II: An archeological assessment of three COE-sponsored channelization projects in the St. Francis Basin, Arkansas, Assembled by Timothy C. Klinger and Mark A. Mathis, pp.5-12. Arkansas Archeological Survey Research Report 14. Fayetteville.

Davis, Hester A.
1982a The compliance process in Arkansas. In A state plan for the conservation of archeological resources in Arkansas, pp. 65-72, edited by Hester A. Davis. Arkansas Archeological Survey Research Series 21. Fayetteville.

1982b A state plan for the conservation of archeological resources in Arkansas, edited by Hester A. Davis. Arkansas Archeological Survey Research Series 21. Fayetteville.

1982c Operating plans. In A state plan for the conservation of archeological resources in Arkansas, pp. OP1-OP54, edited by Hester A. Davis. Arkansas Archeological Survey Research Series 21. Fayetteville.

Dellinger, Samuel C. and Samuel D. Dickinson
1940 Possible antecedents of the middle Mississippian ceramic complex in northeastern Arkansas. American Antiquity 6:133-147.

Dwyer, William A.
1978 Survey of Archeological, architectural and historic resources for Item No. 1, Big Creek Enlargement and Diversion project, Crittenden County, Arkansas, with Gerald P. Smith, Patricia Sledge, Marcus Collier and Guy Weaver. Science Applications, Inc. Huntsville, Alabama.

Fehon, Jacqueline R.
1975 Environmental setting. In The Cache River archeological project: An experiment in contract archeology, assembled by Michael B. Schiffer and John H. House, pp.17-28. Arkansas Archeological Survey Research Series 8. Fayetteville.

Gray, James L. and Dick V. Ferguson
1974 Soil survey of Crittenden County, Arkansas. USDA Soil Conservation Service in Cooperation with the Arkansas Agricultural Experiment Station. U.S. Government Printing Office, Washington, D.C.

Harris, Suzanne E.
1980 Reconstruction of the nineteenth century environment. In Zebree Archeological Project: Excavation, data interpretation, and report on the Zebree Homestead site, Mississippi County, Arkansas, edited by Dan F. Morse and Phyllis A. Morse, pp 13-1--13-14. Report submitted to the Memphis District Corps of Engineers by the Arkansas Archeological Survey. Fayetteville, Arkansas

Heartfield, Price and Greene
1983 Cultural resources intensive survey and testing of Mississippi River Levee Berms, Crittenden and Desha counties, Arkansas and Mississippi, Scott, Cape Girardeau and Pemiscot counties, Missouri. Draft report submitted to the U. S. Army Corps of Engineers, Memphis District by Heartfield, Price and Greene, Inc., Monroe, Louisiana.

Heartfield, Lorraine and David B. Waddell
1983 Cultural resources intensive survey and testing of Mississippi River levee berms, Crittenden and Desha counties, arkansas and Mississippi, Scott, cape Girardeau and Pemiscot counties, Missouri. DRAFT report prepared for the U.S. Army Corps of Engineers, Memphis District by Heartfield, Price and Greene, Inc. Monroe, Louisiana.

House, John H.
1975 Records check and summary of prior archeological knowledge. In The Cache River archeological project: An experiment in contract archeology, assembled by Michael B. Schiffer and John H. House, pp. 29-36. Arkansas Archeological Survey Research Series 8. Fayetteville.

1982 Powell Canal: Baytown Period occupation on Bayou Macon in southeast Arkansas. Arkansas Archeological Survey Research Series 19, W. Frederick Limp series editor. Fayetteville.

Imhoff, Steven M.
1982 The use of soils data in archeology: an Arkansas example. Unpublished M.A. thesis, Department of Anthropology, University of Arkansas. Fayetteville.

Jackson, H. Edwin, Jr.
1979 A cultural resources reconnaissance of the Wapanocca National Wildlife Refuge, Arkansas. The Research Institute, College of Pure and Applied Sciences, Northeast Louisiana University. Monroe, Louisiana.

Jurney, David H., Jr.
1978 A brief outline of regional history. In St. Francis II: An archeological assessment of three COE-sponsored channelization projects in the St. Francis Basin, Arkansas. Arkansas Archeological Survey Research Report 14. Fayetteville.

Kern, John R.
1981 Study of archeological, architectural and historic resources within the Memphis Metropolitan area: Tennessee, Arkansas and Mississippi. Gilbert/Commonwealth.

King, James E.
1980 Palynological studies of Big Lake, Arkansas. In Zebree Archeological Project: Data interpretation, and report on the Zebree Homestead site, Mississippi County, Arkansas, edited by Dan F. Morse and Phyllis A. Morse, pp 14-1--14-9. Report submitted to the Memphis District Corps of Engineers by the Arkansas Archeological Survey. Fayetteville, Arkansas.

Klinger, Timothy C.
1978a Lowland environmental variability and prehistoric settlement behavior in the Lower Mississippi Valley. Mid-Continental Journal of Archaeology 3(2):286-331.

1978b A brief outline of regional prehistory. In St. Francis II: An archeological assessment of three COE-sponsored channelization projects in the St. Francis Basin, Arkansas, assembled by Timothy C. Klinger and Mark A. Mathis, pp. 13-20. Arkansas Archeological Survey research Report 14. Fayetteville.

Klinger, Timothy C. and Steven M. Imhoff
1982 Cultural resources testing along Big Creek: Archeological assessment of 3CT100, 3CT213, 3CT215 and 3CT53 located along the Big Creek Enlargement and Diversion, Item 1, Crittenden County, Arkansas. Historic Preservation Associates Reports 82-1. Fayetteville, Arkansas.

Klinger, Timothy C., Roy J. Cochran, Jr. and Clyde D. Dollar
1983 Berry Cemetery and George Berry Washington: Archeological mitigation and historical documentation of 3CT47 along the Big Creek Enlargement and Diversion, Item 1, Crittenden County, Arkansas. Historic Preservation Associates Reports 83-2. Fayetteville, Arkansas.

Klinger, Timothy C., Steven M. Imhoff and Roy J. Cochran, Jr.
1983 Brougham Lake: Archeological mitigation of 3CT98 along the Big Creek Enlargement and Diversion, Item 1, Crittenden County, Arkansas. Historic Preservation Associates Reports 83-7. Fayetteville, Arkansas.

LeeDecker, Charles H.
1979a A survey level report of the Blackfish Bayou channel enlargement project, items 2 and 3, St. Francis and Crittenden counties, Arkansas. Iroquois Research Institute. Fairfax, Virginia.

1979b A survey level report of the Big Creek channel excavation project, Item 2, Crittenden County, Arkansas. Iroquois Research Institute. Fairfax, Virginia.

1979c A preliminary report of Stations 0+00 to 50+60, cultural resource survey & testing of the Big Creek Channel Enlargement & Diversion, Crittenden County, Arkansas. Prepared for the U.S. Army Corps of Engineers, Memphis District by Iroquois Research Institute, Fairfax, Virginia.

1980a Interim report of cultural resource survey and testing, stations 50+60 to 196+00, Big Creek, Item 1. Letter report submitted to the U.S. Army Corps of Engineers, Memphis District by Iroquois Research Institute, Fairfax, Virginia.

1980b Interim report of stations 196+00 to 563+00, cultural resource survey and testing of the Big Creek Enlargement & Diversion, Item 1, Crittenden County, Arkansas. Letter report submitted to the U.S. Army Corps of Engineers, Memphis District by Iroquois Research Institute, Fairfax, Virginia.

Martin, William A.
1978 An archeological survey of the proposed park in the City of Gilmore, Crittenden County, Arkansas. Report submitted to the City of Gilmore, Arkansas by the Arkansas Archeological Survey, Fayetteville.

McClurkan, Burney B.
1976 Archeological and historical research, Bledsoe Berm project, Corps of Engineers Item No. R-693. Report submitted to the U. S. Army Corps of Engineers, Memphis District by the Arkansas Archeological Survey, Fayetteville.

McGimsey, Charles R., III and Hester A. Davis (editors)
1977 The management of archeological resources: The Airlie House report. Special publication of the Society for American Archaeology.

McNeil, Jimmy D.
1981 A cultural resources survey of Bauxippi-Wyanoke revetment construction area, Crittenden County, Arkansas. Unpublished manuscript on file with the U. S. Army Corps of Engineers, Memphis District.

McNeil, Jimmy D. (continued)
1984 Archeological testing for significance at site 3CT223 along Big Creek Channel, Item 2, Crittenden County, Arkansas. A suppliment [SIC] to the July 1979 Iroquois Research Institute Big Creek, Item 2, survey report. Unpublished manuscript on file with the U. S. Army Corps of Engineers, Memphis District.

1985a A cultural resources survey of Item R-729-R Riverside Slide Repair, West Memphis, Crittenden County, Arkansas. Unpublished manuscript on file with the U. S. Army Corps of Engineers, Memphis District.

1985b A cultural resources survey of Item R-751.1R Riverside Slide Repair, Poker Point, Crittenden County, Arkansas. Unpublished manuscript on file with the U. S. Army Corps of Engineers, Memphis District.

Moore, Clarence B.
1910 Antiquities of the St. Francis, White and Black rivers, Arkansas. Journal of the Academy of Natural Sciences of Philadelphia 14, Part 2.

Morse, Dan F.
1978 Northeast Arkansas phases. Unpublished paper presented at the Avery Island Conference, 10 May 1978.

Morse, Dan F. (continued)
1980 Archeology in the northern Mississippi Alluvial Valley. In Zebree Archeological Project: Excavation, data interpretation, and report on the Zebree Homestead site, Mississippi County, Arkansas, edited by Dan F. Morse and Phyllis A. Morse, pp. 1-1--1-24. Report submitted to the Memphis District, U.S. Army Corps of Engineers, by the Arkansas Archeological Survey. Fayetteville, Arkansas.

Morse, Dan F.
1982 Northeast Arkansas. In A state plan for the conservation of archeological resources in Arkansas, edited by Hester A. Davis, pp. NE1-NE26. Arkansas Archeological Survey Research Series 21. Fayetteville.

Morse, Dan F. and Michael G. Million
1980 Biotic and non-biotic resources. In Zebree Archeological Project: Excavation, data interpretation, and report on the Zebree Homestead site, Mississippi County, Arkansas, edited by Dan F. Morse and Phyllis A. Morse, pp. 16-1--16-30. Report submitted to the Memphis District, U.S. Army Corps of Engineers, by the Arkansas Archeological Survey. Fayetteville, Arkansas.

Morse, Dan F. and Phyllis A. Morse
1983 Archaeology of the Central Mississippi Valley. Academic Press, Inc. New York.

Morse, Phyllis A.
1977 Archeological survey of West Memphis Recreation Complex. Report submitted to the City of West Memphis, Arkansas by the Arkansas Archeological Survey, Fayetteville.

Nixon, Joseph M.
1982 An archaeological, architectural and historical resources survey of 21 Mississippi River levee berm items, Crittenden and Desha counties, Arkansas: Component 6. Cultural Resources Management Report 48. Fischer-Stein Associates. Carbondale, Illinois.

Palmer, Edward
1917 Arkansas mounds. The Arkansas Historical Association Vol. 4:390-448. Conway, Arkansas.

Perino, Gregory
1966 The Banks Village site, Crittenden County, Arkansas. Memoir, Missouri Archaeological Society 4. Columbia, Missouri.

1967 The Cherry Valley Mound and Banks Mound 3. Central States Archaeological Societies Memoir 1.

1985 Selected preforms, points and knives of the North American Indians, Volume 1. Points and Barbs Press. Idabel, Oklahoma.

Phillips, Philip
1970 Archaeological survey in the Lower Yazoo Basin, Mississippi, 1949-1955. Papers of the Peabody Museum of Archaeology and Ethnology Harvard University Volume 60. Cambridge.

Phillips, Philip, James A. Ford and James B. Griffin
1951 Archaeological survey in the Lower Mississippi Alluvial Valley, 1940-1947. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University Vol. XXV. Cambridge, Massachusetts.

Putnam, John A.
1951 Management of bottomland hardwoods. Occasional Paper No. 116. USDA Forest Service, Southern Experiment Station.

Putnam, John A. and Henry Bull
1932 The trees of the bottomlands of the Mississippi River Delta region. Occasional Paper No. 27. USDA, Forest Service, Southern Experiment Station.

Saucier, Roger T.
1964 Geological investigation of the St. Francis Basin, Lower Mississippi Valley. U.S. Army Corps of Engineers, Waterways Experiment Station, Technical Report 3-659. Vicksburg, Mississippi.

1974 Quaternary geology of the Lower Mississippi Valley. Arkansas Archeological Survey Research Series 6. Fayetteville.

Shelford, Victor E.
1963 The ecology of North America. University of Illinois Press. Urbana.

Smith, Gerald P.
1976 Archaeological resources of the Fifteen Mile Bayou project area, St. Francis and Crittenden counties, Arkansas. Chuckalissa Museum, Department of Anthropology, Memphis State University. Memphis, Tennessee.

Stewart, Judith C.
1985 Kennett/Baytown distributional variability: An analysis using the 1976 Village Creek collections. In Village Creek, an explicitly regional approach to the study of cultural resources, pp. 189-203, assembled by Timothy C. Klinger. Arkansas Archeological Survey.

Thomas, Cyrus
1894 Report on the mound explorations of the Bureau of Ethnology. Bureau of Ethnology, 12th Annual Report. Washington, D. C.

United States Department of Agriculture
1972 Official description of the Sharkey series. Soil conservation service. Fort Worth, Texas.

1973 Official description of the Alligator series. Soil conservation Service. Fort Worth, Texas.

Waddell, David B.
1981 An archeological survey of the proposed sewer improvement project area for the City of West Memphis, Crittenden County, Arkansas. Unpublished report submitted to Bond Consulting Engineers, Inc., West Memphis, Arkansas by the Arkansas Archeological Survey, Fayetteville.

SECTION C

SCOPE OF WORK

Archeological Testing and Evaluation of Archeological Sites 8C2#2, and 8C2#3, Big Creek Item 2 Channel Enlargement Project Crittenden County, Arkansas.

1. General.

1.01. The Contractor shall conduct archeological testing of Big Creek Item 2 Channel Enlargement Project, Crittenden County, Arkansas. These tasks are in partial fulfillment of the Memphis District's obligations under the National Historic Preservation Act of 1966 (P.L. 89-665); the National Environment Policy Act of 1969 (P.L. 91-190); Executive Order 11593, "Protection and Enhancement of Cultural Environment," 13 May 1971 (360FR3921); Preservation of Historic and Archeological Data, 1974 (P.L. 93-291); and the Advisory Council on Historic Preservation, "Procedures for the Protection of Historic and Cultural Properties" (36 CFR 8, Part 800).

1.02. Personnel Standards.

a. The Contractor shall utilize a systematic, interdisciplinary approach to conducting the study. Specialized knowledge and skills will be used during the course of the study to include expertise in archeology, history, architecture, geology and other disciplines as required. Techniques and

methodologies used for the study shall be representative of the state of current professional knowledge and development.

b. The following minimal experiential and academic standards shall apply to personnel involved in cultural resources investigations described in this Scope of Work:

1. Archeological Project Directors or Principal Investigators (PI). Individuals in charge of an archeological project or research investigation contract, in addition to meeting the appropriate standards for archeologist, must have a publication record that demonstrates extensive experience in successful field project formulation, execution and technical monograph reporting. The Contracting Officer may also require suitable professional references to obtain estimates regarding the adequacy of prior work.

2. Archeologist. The minimum formal qualifications for individuals practicing archeology as a profession are a B.A. or B.S. degree from an accredited college or university, followed by a minimum of two years of successful graduate study with concentration in anthropology and specialization in archeology and at least two summer field schools or their equivalent under the supervision of archeologists of recognized competence. A Master's thesis or its equivalent in research and publication is highly recommended, as in the M.A. degree.

3. Other Professional Personnel. All non-archeological personnel utilized for their special knowledge and expertise must have a B.A. or B.S.

degree from an accredited college or university, followed by a minimum of one year of successful graduate study with concentration in appropriate study.

4. Other Supervisory Personnel. Persons in any archeological supervisory position must hold a B.A., B.S. or M.A. degree with a concentration in archeology and a minimum of 2 years of field and laboratory experience.

5. Crew Members and Lab Workers. All crew members and lab workers must have prior experience compatible with the tasks to be performed under this contract. An academic background in archeology/anthropology is highly recommended.

c. All operations shall be conducted under the supervision of qualified professionals in the discipline appropriate to the data that is to be discovered, described or analyzed. Vitae of personnel involved in project activities may be required by the Contracting Officer at anytime during the period of service of this contract.

1.03. The Contractor shall designate in writing the name of the Principal Investigator. Participation time of the Principal Investigator shall average a minimum of 50 hours per month during the period of service of this contract. In the event of controversy or court challenge, the Principal Investigator shall be available to testify with respect to report findings. The additional services and expenses would be at Government expense, per paragraph 1.09 below.

1.04. The Contractor shall keep standard field records which will include, but are not limited to, field notebooks, state approved site forms (prehistoric, historic, architectural) field data forms and graphics and photographs. Publishable quality site maps with precise boundaries and proposed impact boundaries will be submitted for each site.

1.05. To conduct the field investigation, the Contractor will obtain all necessary permits, licenses; and approvals from all local, state and Federal authorities. Should it become necessary in the performance of the work and services of the Contractor to secure the right of ingress and egress to perform any of the work required herein on properties not owned or controlled by the Government, the Contractor shall secure the consent of the owner, his representative, or agent, prior to effecting entry on such property.

1.06. Innovative approaches to data location, collection, description and analysis, consistent with other provisions of this purchase order and the Cultural Resources requirements of the Memphis District, are encouraged. Such approaches will require prior consultation with the Contracting Officer and/or his authorized representative.

1.07. No mechanical power equipment shall be utilized in any cultural resource activity without specific written permission of the Contracting Officer.

1.08. Techniques and methodologies used during the testing shall be representative of the current state of knowledge for their respective disciplines.

1.09. The Contractor shall furnish expert personnel to attend conferences and furnish testimony in any judicial proceedings involving the archeological and historical study, evaluation, analysis and report. When required, arrangements for these services and payment therefor will be made by representatives of either the Corps of Engineers or the Department of Justice.

1.10. The Contractor shall supply such graphic aids (ex: profile and plan drawings) or tables as are necessary to provide a ready and clear understanding of special relationships or other data discussed in the text of the report. Such tables or figures shall appear as appropriate in the body of the report.

1.11. The Contractor, prior to the acceptance of the final report, shall not release any sketch, photograph, report or other material of any nature obtained or prepared under this contract without specific written approval of the Contracting Officer.

1.12. The extent and character of the work to be accomplished by the Contractor shall be subject to the general supervision, direction, control and approval of the Contracting Officer. The Contracting Officer may have a

representative of the Government present during any or all phases of the described cultural resource project.

2. Study Area.

2.01. The Big Creek, Item 2, Enlargement Project is located in Crittenden County, Arkansas. The proposed improvements include ditch cleanout and piling excavated materials on the ditch banks. The project areas are Sites BC2#2 and BC2#3. Both sites can be located on the Deckerville, Arkansas, 15 minute USGS Quadrangle map. Site BC2#2 is in T9N, R8E, SW 1/4 of the SE 1/4 of the NW 1/4 of Section 32 at UTM Zone 15, E748570, N3916110 at Station 953+25 on the left descending bank. Site BC2#3 is in T9N, R8E, SE 1/4 of the NW 1/4 of the SE 1/4 of Section 32 at UTM Zone 15, E749120, N3915760 at Station 977+50 on the left descending bank. Iroquois Research Institute excavated one subsurface (1m x 1m) test unit in each site.

3. Definitions.

3.01. "Cultural resources" are defined to include any buildings, site, district, structure, object, data, or other material relating to the history, architecture, archeology, or culture of an area.

3.02. "Background and Literature Search" is defined as a comprehensive examination of existing literature and records for the purpose of inferring the potential presence and character of cultural resources in the study area. The examination may also serve as collateral information to field data in

evaluating the eligibility of cultural resources for inclusion in the National Register of Historic Places or in amelionating losses of significant data in such resources.

3.03. "Intensive Survey" is defined as a comprehensive, systematic, and detailed on-the-ground survey of an area, of sufficient intensity to determine the number, types, extent and distribution of cultural resources present and their relationship to project features.

3.04. "Mitigation" is defined as the amelioration of losses of significant prehistoric, historic, or architectural resources which will be accomplished through preplanned actions to avoid, preserve, protect, or minimize adverse effect upon such resources or to recover a representative sample of the data they contain by implementation of scientific research and other professional techniques and procedures. Mitigation of losses of cultural resources includes, but is not limited to, such measures as: (1) recovery and preservation of an adequate sample of archaeological data to allow for analysis and published interpretation of the cultural and environmental conditions prevailing at the time(s) the area was utilized by man; (2) recording, through architectural quality photographs and/or measured drawings of buildings, structures, districts, sites and objects and deposition of such documentation in the Library of Congress as a part of the National Architectural and Engineering Record; (3) relocation of buildings, structures and objects; (4) modification of plans or authorized projects to provide for preservation of resources in place; (5) reduction or elimination of impacts by engineering solutions to avoid mechanical effects of wave wash, scour, sedimentation and related processes and the effects of saturation.

3.05. "Reconnaissance" is defined as an on-the-ground examination of selected portions of the study area, and related analysis adequate to assess the general nature of resources in the overall study area and the probable impact on resources of alternate plans under consideration. Normally reconnaissance will involve the intensive examination of not more than 15 percent of the total proposed impact area.

3.06. "Significance" is attributable to those cultural resources of historical, architectural, or archeological value when such properties are included in or have been determined by the Secretary of the Interior to be eligible for inclusion in the National Register of Historic Places after evaluation against the criteria contained in How to Complete National Register Forms.

3.07. "Testing" is defined as the systematic removal of the scientific, prehisturic, historic, and/or archeological data that provide an archeological or architectual property with its research or data value. Testing may include controlled surface survey, shovel testing, profiling, and limited subsurface test excavations of the properties to be affected for purposes of research planning, the development of specific plans for research activites, excavation, the development of specific plans for research activities, preparation of notes and records, and other forms of physical removal of data and the material analysis of such data and material, preparation of reports on such data and material and dissemination of reports and other products of the research. Subsurface testing shall not proceed to the level of mitigation.

3.08. "Analysis" is the systematic examination of material data, environmental data, ethnographic data, written records, or other data which may be prerequisite to adequately evaluating those qualities of cultural loci which contribute to their significance.

4. General Performance Specifications.

4.01. The Contractor shall prepare a draft and final report detailing the results of the study and their recommendations.

4.02. Surface Data Retrieval.

Surface collection of the site area shall be accomplished in order to obtain data representative of total site surface content. Both historic and prehistoric items shall be collected. The Contractor shall carefully note and record descriptions of surface conditions of the site including ground cover and the suitability of soil surfaces for detecting cultural items (ex: recent rainfall, standing water or mud). If ground surfaces are not highly conducive to surface collection, screened shovel test units shall be used to augment surface collection procedures.

Care should be taken to avoid bias in collecting certain classes of data or artifact types to the exclusion of others (ex: debitage or faunal remains) so as to insure that collections accurately reflect both the full range and the relative proportions of data classes present (ex: the proportion of debitage to implements or types of implements to each other). Such a collecting strategy shall require the total collection of quadrat or

other sample units in sufficient quantities to reasonably assure that sample data are representative of such discrete site subareas as may exist. Since the number and placement of such sample unit will depend, in part, on the subjective evaluation of intrasite variability, and the amount of ground cover, the Contractor shall describe, in the report, the rationale for the number and distribution of collection units. In the event that the Contractor utilizes systematic sampling procedures in obtaining representative surface samples, care should be taken to avoid periodicity in recovered data No individual sample unit type used in surface data collection shall exceed 36 square meters in area.

The Contractor shall undertake (in addition and subsequent to sample surface collecting) a general site collection in order to increase the sample size of certain classes of data which the Principal Investigator may deem prerequisite to an adequate site-specific and intersite evaluation of data.

4.03. Subsurface Data Retrieval - Testing.

a. Subsurface (1m x 1m) test units (other than shovel cut units) shall be excavated in levels no greater than 10 centimeters. Where cultural zonation or plow disturbance is present, however, excavated materials shall be removed by zones (and 10 cm levels within zones where possible). Subsurface test units shall extend to a depth of at least 20 centimeters below artifact bearing soils. A portion of each test unit, measured from one corner (of a minimum 30 X 30 centimeters), shall be excavated to a depth of 40 centimeters below artifact bearing soils. All excavated material

(including plow zone material) shall be screened using a minimum of 1/4" hardware cloth. Representative profile drawings shall be made of each excavated unit.

b. The Contractor shall establish a permanent datum at each site which shall be precisely related to the site boundaries as well as to a permanent reference point (in terms of azimuth and distance). If possible, the permanent reference point used shall appear on Government blueline (project) drawings and/or 7.5 minute U.S.G.S. quad maps. If no permanent landmark is available, a permanent datum shall be established in a secure location for use as a reference point. The permanent datum shall be precisely plotted and shown on U.S.G.S. quad maps and project drawings. All descriptions of site location shall refer to the location of the primary site datum.

c. Stringent horizontal spatial control of site specific investigations will be maintined by relating the location of all collection and test units to the primary site datum.

d. Other types of subsurface units may, at the Contractor's option, be utilized in addition to those units required by this Scope of Work.

e. Subsurface investigations will be limited to testing and shall not proceed to the level of mitigation. However, in order to provide enough information to make a determination of site eligibility to the National Register of Historic Places, a minimum of three (3) test units will be placed into each site.

f. All test units excavated shall be backfilled by the Contractor.

4.04. Anaysis and Curation. Unless otherwise indicated, artifactural and non-artifactural analysis shall be of an adequate level and nature to fulfill the requirements of this Scope of Work. All recovered cultural items shall be cataloged in a manner consistent with state requirements or standards of curation in the state in which the study occurs. The Contractor shall consult with appropriate state officials as soon as possible following the conclusion of fieldwork in order to obtain information (ex: accession numbers) prerequisite to such cataloging procedures. The Contractor shall have access to a depository for notes, photographs and artifacts (preferably in the state in which the study occurs) where they can be permanently available for study by qualified scholars. If such marerials are not in Federal ownership, applicable state laws, if any, should be followed concerning the disposition of the materials after the completion of the final report. Efforts to insure the permanent curation of properly cataloged cultural resources materials in an appropriate institution shall be considered an integral part of the requirements of this Scope of Work.

5. General Report Requirements.

5.01. The primary purpose of the cultural resources report is to serve as a planning tool which aids the Government in meeting its obligations to preserve and protect our cultural heritage. The report will be in the form of a comprehensive, scholarly document that not only fulfills mandated legal

requirements but also serves as a scientific reference for future cultural resources studies. As such, the report's content must be not only descriptive but also analytic in nature.

5.02. Upon completion of all field investigation and research, the Contractor shall prepare reports detailing the work accomplished, the results, the recommendations, and appropriate alternative mitigation measures, when required, for each project area.

5.03. The report shall include, but not necessarily be limited to, the following sections and items:

a. Title Page. The title page should provide the following information; the type of task undertaken, the cultural resources which were assessed (archeological, historical, architectural); the project name and location (county and state), the date of the report; the Contractor's name; the purchase order number; the name of the author(s) and/or the Principal Investigator; and the agency for which the report is being prepared.

b. Abstract. The abstract should include a summary of the number and types of resources which were tested, results of activities and the recommendations of the Principal Investigator.

c. Table of Contents.

d. Introduction. This section shall include the purpose of the report; a description of the proposed project; a map of the general area; a project map; and the dates during which the task was conducted. The introduction shall also contain the name of the institution where recovered materials will be curated.

e. Environmental Context. This section shall contain, but not be limited to, a discussion of probable past floral and faunal characteristics of the project area. Since data in this section will be used in the evaluation of specific cultural resource significance, it is imperative that the quantity and quality of environmental data be sufficient to allow detailed analysis of the relationship between past cultural activities and environmental variables.

f. Previous Research. This section shall describe previous research which may be useful in deriving or interpreting relevant background research data, problem domains, or research questions and in providing a context in which to examine the significance of cultural resources.

g. Testing and Analytical Methods. This section shall contain an explicit discussion of research strategy, and should demonstrate how such information as environmental data, previous research data, and personal interviews have been utilized in constructing such a strategy.

h. Testing and Analytical Results. This section shall discuss resources tested and analyzed; the nature and results of analysis, and the scientific importance or significance of the work. Quantified listings and descriptions

of all recovered artifacts and their specific proveniences must be included in this section or added to the report as an appendix. Tested sites shall include a site number.

i. Conclusions and Recommendations.

(1) This section shall contain assessments of the eligibility of specific cultural properties in the study area for inclusion in the National Register of Historic Places.

(2) Significance shall be discussed explicitly in terms of previous regional and local research and relevant problem domains. Statements concerning significance shall contain a detailed, well-reasoned argument for the property's research potential in contributing to the understanding of cultural patterns, processes or activities important to the history or prehistory of the Locality, Region or nation, or other criteria of significance. Conclusions concerning insignificance, likewise, shall be fully documented and contain detailed and well-reasoned arguments as to why the property fails to display adequate research potential or other characteristics adequate to meet National Register criteria of significance. For example, conclusions concerning significance or insignificance relating solely to the lack of contextual integrity due to plow disturbance or the lack of subsurface deposits will be considered inadequate. Where appropriate, due consideration should be given to the data potential of such variables as site functional characteristics, horizontal intersite or intrasite spatial patterning of data and the importance of the site as a representative systemic element in cultural patterning. The Contractor

should be guided, in this regard, by Archeological Property Nominations by Tom King (Published in 1159), Vol. 1, No. 2). All report conclusions and recommendations shall be logically and explicitly derived from data discussed in the report.

(3) The significance or insignificance of cultural resources can be determined adequately only within the context of the most recent available local and regional data base. Consequently, the evaluation of specific individual cultural loci examined during the course of contract activities shall relate those resources not only to previously known cultural data but also to a synthesized corpus of data including that generated in the present study.

(4) The Contractor shall provide appropriate alternative mitigation measures for significant resources which will be adversely impacted. Data will be provided to support the need for mitigation, and the relative merits of each mitigation design will be discussed. Preservation of significant cultural resources is nearly always considered preferable to recovery of data through excavation. When a significant site can be preserved for a cost reasonably comparable to, or less than the cost required to recover the data, full consideration shall be given to this course of action.

(5) Conclusions derived from testing activities concerning the nature, quantity and distribution of cultural items should be used in describing the probable impact of project work on cultural resources.

j. Reference (American Antiquity style).

k. Appendices (Maps, correspondence, etc.) A copy of this Scope of Work shall be included as an appendix in all reports.

5.04. The above items do not necessarily have to be discrete sections; however, they should be readily discernable to the reader. The detail of the above items may vary somewhat with the purpose and nature of the study.

5.05. In order to prevent potential damage to cultural resources, no information shall appear in the body of the report which would reveal precise resource location. All maps which indicate or imply precise site locations shall be included in reports as a readily removable appendix (ex: envelope).

5.06. No logo or other such organizational designation shall appear in any part of the report (including tables or figures) other than the title page.

5.07. Unless specifically authorized by the Contracting Officer, all reports shall utilize permanent site numbers assigned by the state in which the study occurs.

5.08. All appropriate information (including typologies and other classificatory units) not generated in these purchase order activities shall be suitably referenced.

5.09. Reports detailing testing activities shall contain site specific maps. Site maps shall indicate site datum(s), location of data collection units (including shovel tests, subsurface test units and surface collection units), site boundaries in relation to proposed project activites, site grid systems (where appropriate) and such other items as the Contractor may deem appropriate to the purposes of this purchase order.

5.10. Information shall be presented in textual, tabular, and graphic forms, whichever are most appropriate, effective and advantageous to communicate necessary information. All tables, figures and maps appearing in the report shall be of publishable quality.

5.11. Any abbreviated phrases used in the text shall be spelled out when the phrase first occurs in the text. For example use "State Historic Preservation Officer (SHPO)" in the *initial reference* and *thereafter* "SHPO" may be used.

5.12. The first time the common name of a biological species is used it should be followed by the scientific name.

5.13. In addition to street addresses or property names, sites shall be located on the Universal Transverse Mercator (UTM) grid.

5.14. All measurements should be metric. If the Contractor's equipment is in the English system, then the metric equivalents should follow in parentheses.

5.15. As appropriate, diagnostic and/or unique artifacts, cultural resources or their contexts shall be shown by drawings or photographs.

5.16. Black and white photographs are preferred except when color changes are important for understanding the data being presented. No instant type photographs may be used.

5.17. Negatives of all black and white photographs and/or color slides of all plates included in the final report shall be submitted so that copies for distribution can be made.

6. Submittals.

6.01. The Contractor shall, unless delayed due to causes beyond his fault or negligence, complete all work and services under the purchase order within the following time limitations after receipt of notice to proceed.

a. Six (6) copies of the draft report will be submitted within 70 calendar days following receipt of notice to proceed.

b. The Government shall review the draft report and provide comments to the Contractor within 20 calendar days after receipt of the Government's comments on the draft report.

c. An unbound original and 25 bound copies of the final report shall be submitted within 30 calendar days following the Contractor's receipt of the Government's comments on the draft report.

6.02. The Contractor shall submit under separate cover 4 copies of appropriate 15' quadrangle maps (7.5' when available) and other site drawings which show exact boundaries of all cultural resources within the project area and their relationship to project features, and single copies of all forms, records and photographs described in paragraph 1.04.

6.03. The Contractor shall submit to the Contracting Officer completed National Register forms including photographs, maps, and drawings in accordance with the National Register Program if the sites tested are found to meet the criteria of eligibility for nomination and for determination of significance. The completed National Register forms are to be submitted with the final report.

6.04. At any time during the period of service of this contract, upon the written request of the Contracting Officer, the Contractor shall submit, within 30 calendar days, any portion or all field records described in paragraph 1.04 without additional cost to the Government.

7. Schedule.

7.01. The Contractor shall, unless delayed due to causes beyond his control and without his fault or negligence, complete all work and services under this contract within the following time limitations.

Activity	Due Date (Beginning with acknowledged date of receipt of notice to proceed)
Begin Testing of Sites BC2#2 and BC2#3 Big Creek, Item 2, Crittenden County, Arkansas	10 calendar days
Submittal of Draft Report	70 calendar days
Government Review of Draft Reports	120 calendar days
Contractor's Submittal of Final Reports	150 calendar days

7.02. The Contractor shall make any required corrections after review by the Contracting Officer of the reports. More than one such group of corrections may be required. In the event that any of the Government review periods are exceeded and upon request of the Contractor, the purchase order period will be automatically extended on a calendar day-for-day basis. Such extension shall be granted at no additional cost to the Government.

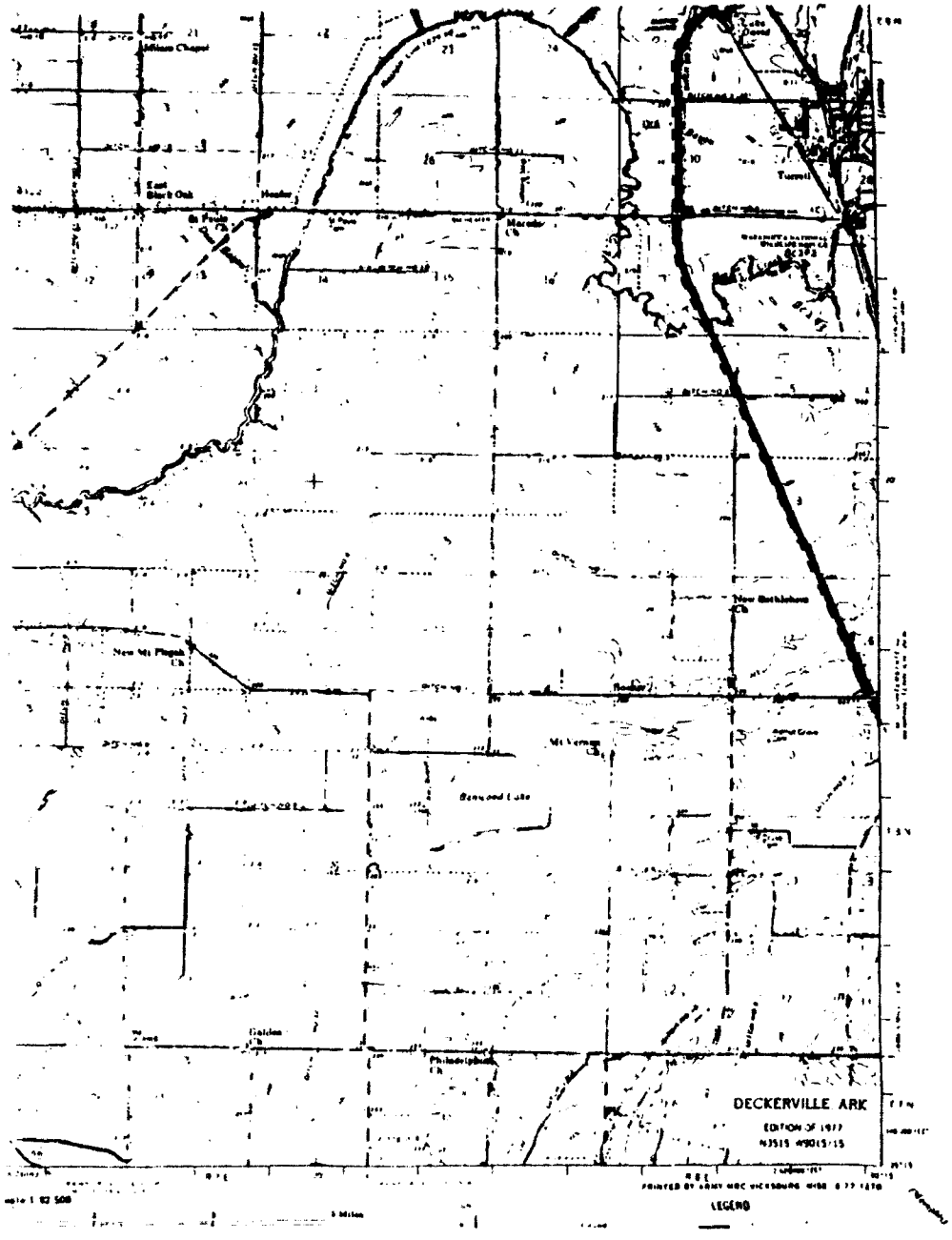
8. Method of Payment.

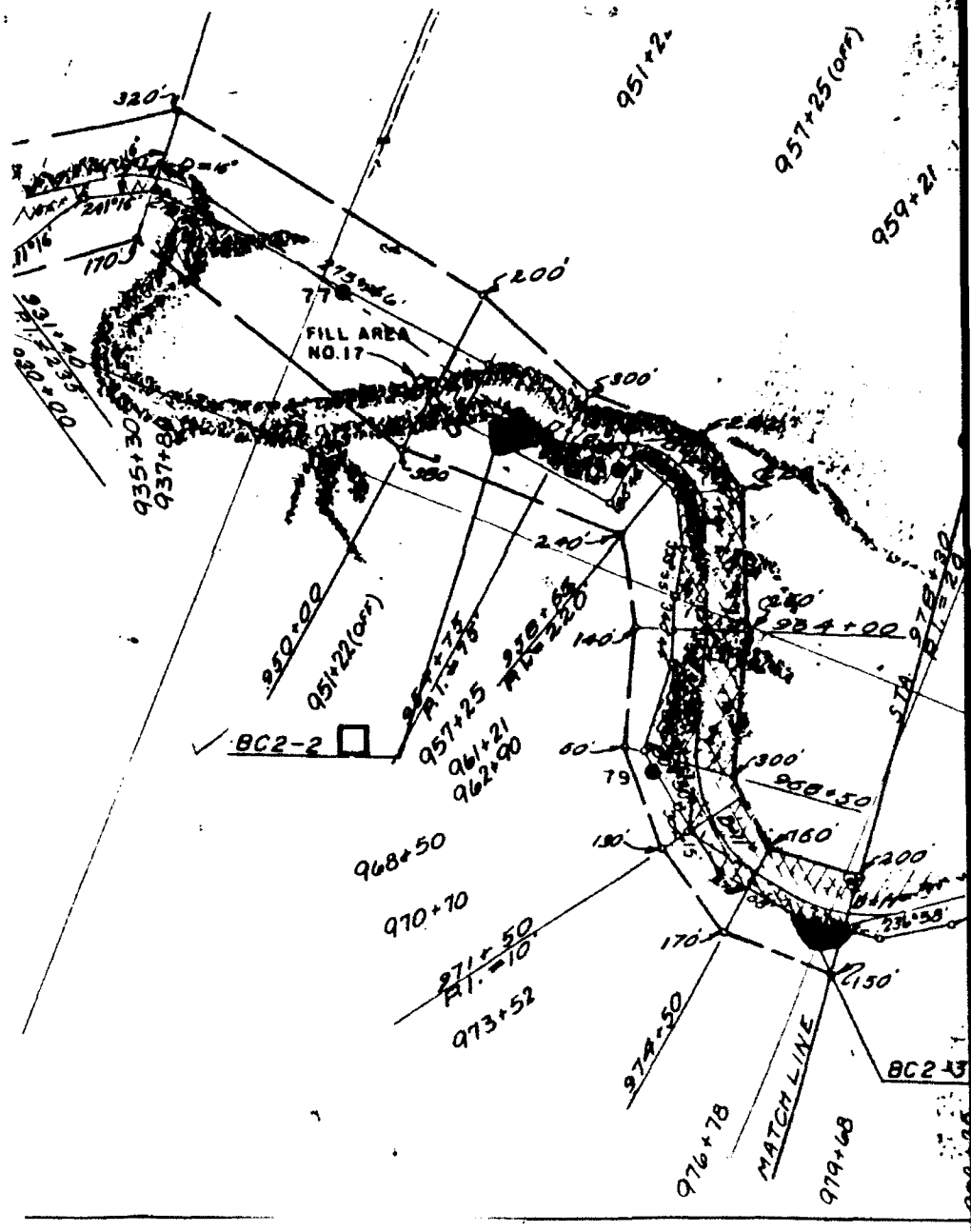
8.01. Upon satisfactory completion of work by the Contractor, in accordance with the provisions of this purchase order, and its acceptance by the

Contracting Officer, the Contractor will be paid the amount of money indicated in Block 25 of the purchase order.

8.02. If the Contractor's work is found to be unsatisfactory and if it is determined that fault or negligence on the part of the Contractor of his employees has caused the unsatisfactory condition, the Contractor will be liable for all costs in connection with correcting the unsatisfactory work. The work may be performed by Government forces or Contractor forces at the direction of the Contracting Officer. In any event, the Contractor will be held responsible for all costs required for correction of the unsatisfactory work, including payments for services, automotive expenses, equipment rental, supervision, and any other costs in connection therewith, where such unsatisfactory work as deemed by the Contracting Officer to be the result of carelessness, incompetent performance or negligence by the Contractor's employees. The Contractor will not be held liable for any work or type of work not covered by this purchase order.

8.03. Prior to settlement upon termination of the purchase order, and as a condition precendent thereto, the Contractor shall execute and deliver to the Contracting Officer a release of all claims against the Government arising under or by virtue of the purchase order, other than such claims, if any, as may be specifically excepted by the Contractor from the operation of the release in stated amounts to be set forth therein.


DECKERVILLE ARK
EDITION OF 1977
N3515 W9015/15
LEGEND


FILL AREA NO.17
BC2-2
951+22(off)
957+25(off)
959+21
961+21
962+90
968+50
970+10
971+50
973+52
974+50
976+78
979+68
MATCH LINE
BC2-3

APPENDIX B

Project Participants

ROBERT F. CANDE assisted in the fieldwork. Mr. Cande received a B.A. in anthropology from East Carolina University in 1975 and is presently working toward an M.A. in anthropology at the University of Arkansas.

KATHLEEN A. HINKLE directed the fieldwork. Ms. Hinkle received a B.A. in anthropology from Ball State University in 1980 and an M.A. in anthropology from the University of Arkansas in 1984>

STEVEN M. IMHOFF analyzed the collections and authored portions of the technical report. Mr. Imhoff received a B.S. in sociology from the University of Tulsa in 1974 and an M.A. in anthropology from the University of Arkansas in 1982. Mr. Imhoff is also a member of the Society of Professional Archeologists.

RICHARD P. KANDARE assisted in the fieldwork. Mr. Kandare received an M.A. in anthropology from the University of Arkansas in 1982 and is a member of the Society of Professional Archeologists.

TIMOTHY C. KLINGER served as Principal Investigator and wrote various portions of the technical report. Mr. Klinger received an M.A. in anthropology from the University of Arkansas in 1977 and a J.D. from the University of Arkansas School of Law in 1982. Mr. Klinger is a member of the Society of Professional Archeologists and is an Attorney at Law licensed by the State of Arkansas.

WALTER UNGLAUB assisted in the preparation of the technical report.